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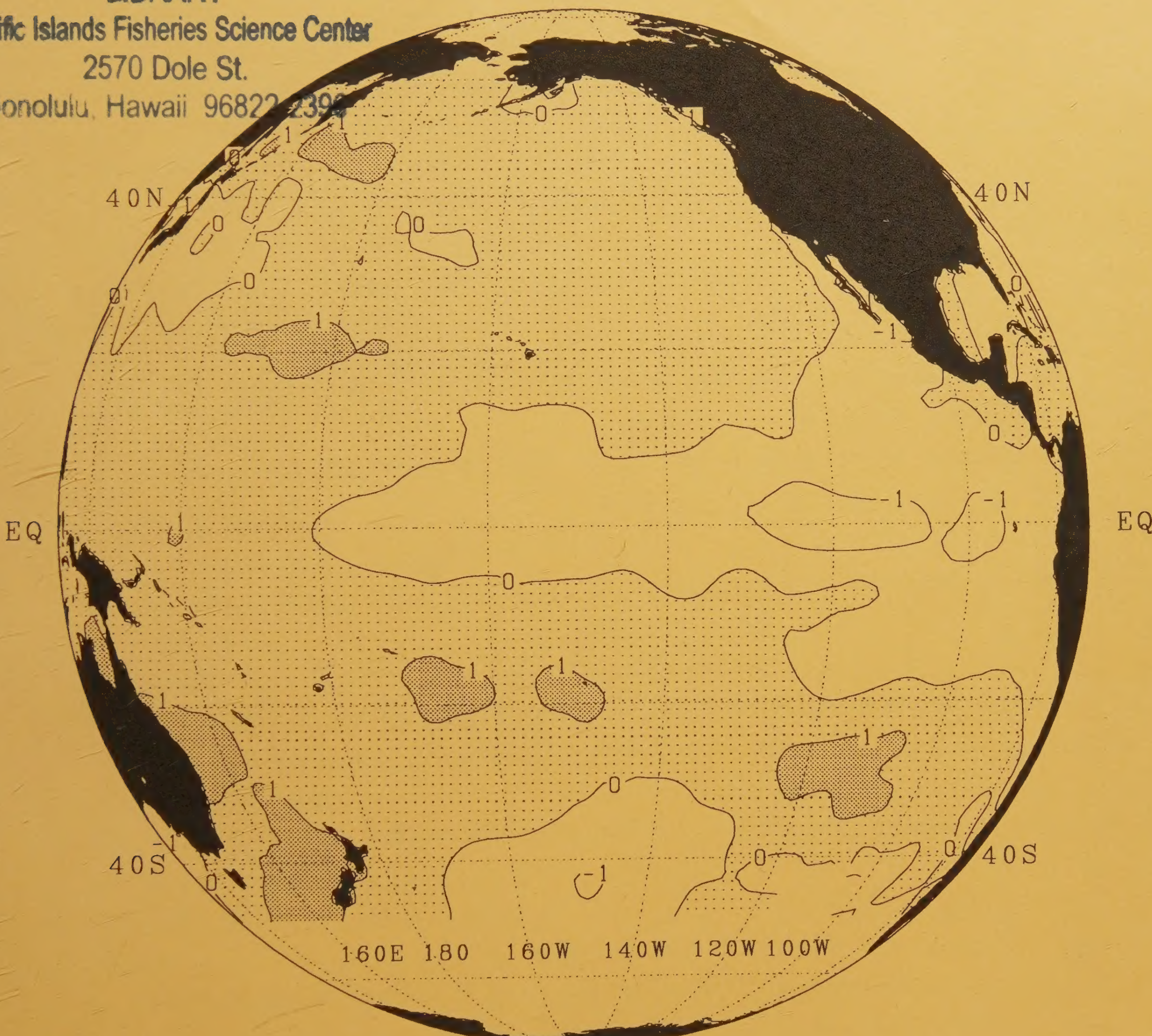
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気象庁 地球環境・海洋部

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気象庁海洋月報は、気象庁 地球環境・海洋部 海洋気象情報室で作成しています。
本月報に関する問い合わせは、

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Monthly Ocean Report is prepared by the Office of Marine Prediction, Global Environment and Marine Department, Japan Meteorological Agency.

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表紙は、2005 年 12 月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for December 2005 in the Pacific Ocean.
Areas of positive anomalies are shaded.

目　次

* MGDSST (Merged satellite and *in-situ* data Global Daily SST)を使用している。

** 従来と同様の、現場観測による海面水温をもとにした解析値を使用している。

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* Based on MGDSST (Merged satellite and *in-situ* data Global Daily SST).
** Based on the traditional analysis using *in-situ* SSTs.

海況の特徴（２００５年１２月）

日本近海の海況

海面水温は、北海道周辺の海域で平年より1℃以上高かった。一方、常磐沖には平年より1℃以上低い海域が見られた（第４図）。

黒潮は九州東岸から潮岬にかけて接岸した後、上旬･中旬は東海沖を東へ流れ、三宅島の南を通過し、房総半島沖を北東に流れていた。下旬は東海沖を東南東へ流れた後、八丈島の南を通過し、房総半島沖を北東に流れていた（第９図）。

太平洋の海況

太平洋赤道域の海面水温は、155°Wから80°Wにかけて平年より0.5℃以上低く、130°Wから95°Wにかけては-1℃を超える負偏差が見られた。一方、140°Eから165°Eにかけて平年より0.5℃以上高かった。

北太平洋の海面水温は、日本近海を除き広く正偏差が見られた。特に 45°N に沿った 150°E から日付変更線にかけてと、20°N に沿った 160°E から 170°W にかけての海域で+1℃を超える正偏差が見られた（第１７図）。

Highlights December 2005

Seas adjacent to Japan

SSTs were more than 1℃ above normal in the seas around Hokkaido. Negative SST anomalies exceeding -1℃ were found in the seas off Joban (Fig. 4).

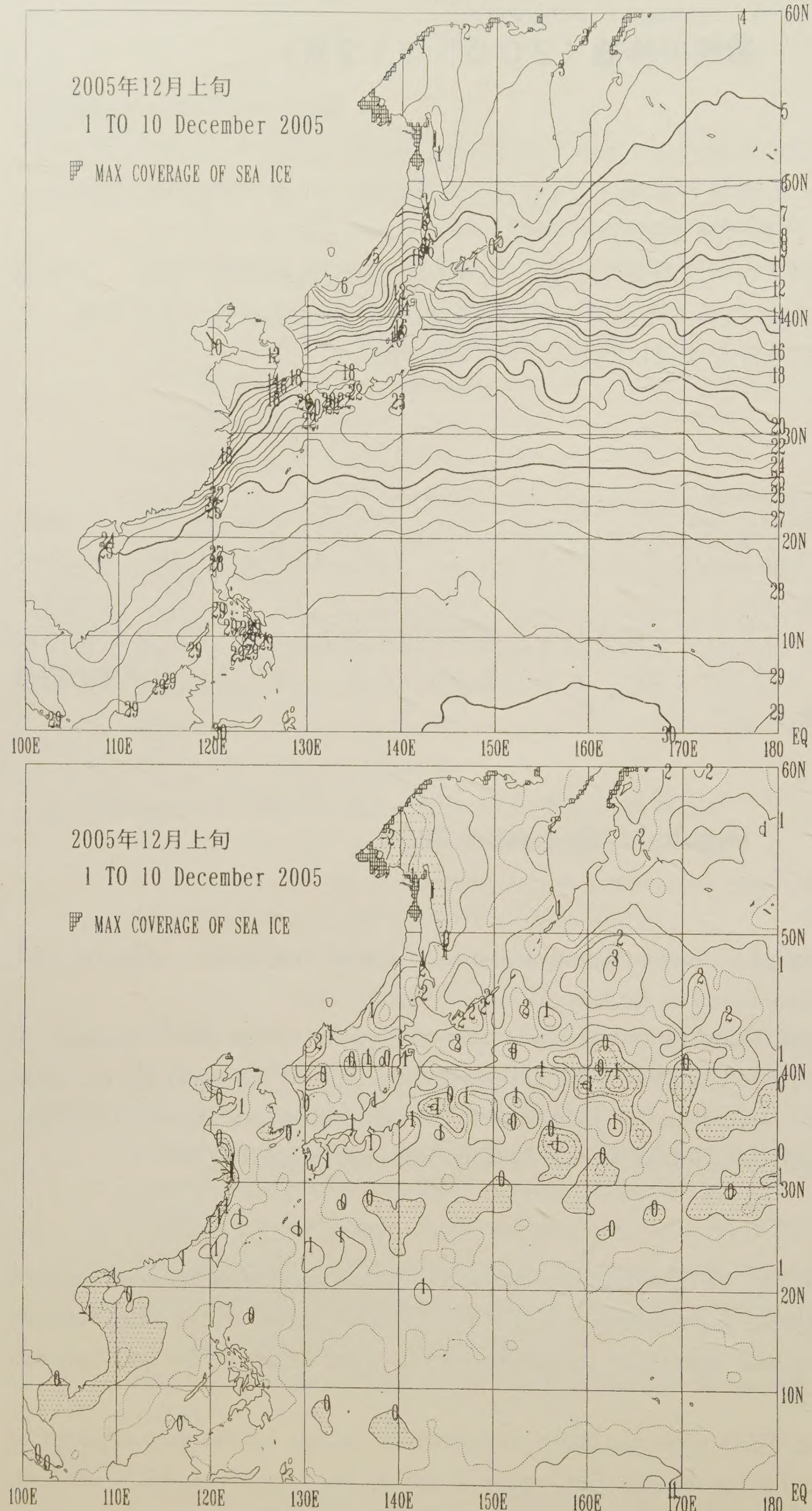
The Kuroshio flowed along the coasts from east of Kyushu to the Kii Peninsula. It flowed eastward off Tokai, passed south of Miyake Island, then flowed NE-ward off the Boso Peninsula in early and middle December. In the rest of the month, it flowed ESE-ward off Tokai, passed south of Hachijo Island, then flowed NE-ward off the Boso Peninsula (Fig. 9).

Pacific Ocean

In the equatorial Pacific, SSTs were more than 0.5℃ below normal in the seas between 155°W and 80°W. Negative SST anomalies exceeding -1℃ were found in the seas between 130°W and 95°W. Positive SST anomalies exceeding +0.5℃ were found in the seas between 140°E and 165°E.

In the North Pacific, SSTs were generally above normal except for the seas adjacent to Japan. Positive SST anomalies exceeding +1℃ were found in the seas along 45°N between 150°E and the date line, and along 20°N between 160°E and 170°W (Fig. 17).

Ten-day mean SST & Anomalies



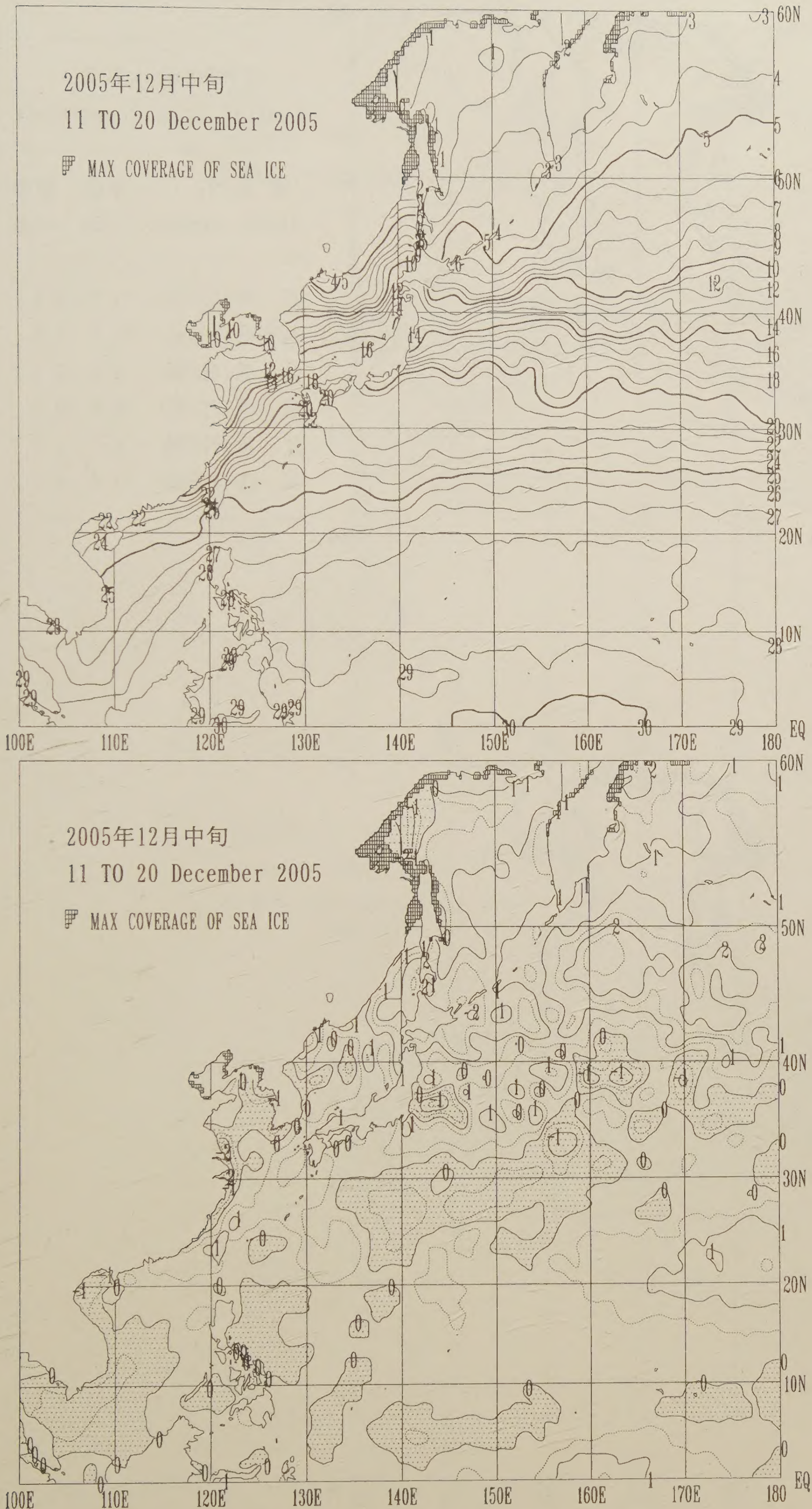
旬平均沿岸水温(℃)
Coastal Water Temperature

地 点 名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	22.9	-0.2
御前崎(47655)	15.5	0.8
小名浜(47598)	12.7	-1.4
宮　古(47585)	13.1	0.1
江　差(47428)	10.8	1.5
浜　田(47755)	16.7	0.6

第1図 北西太平洋旬平均海面水温図(上)及び偏差図(下) (2005年12月上旬)

Fig. 1 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 1st ten-day period in December 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.

Ten-day mean SST & Anomalies



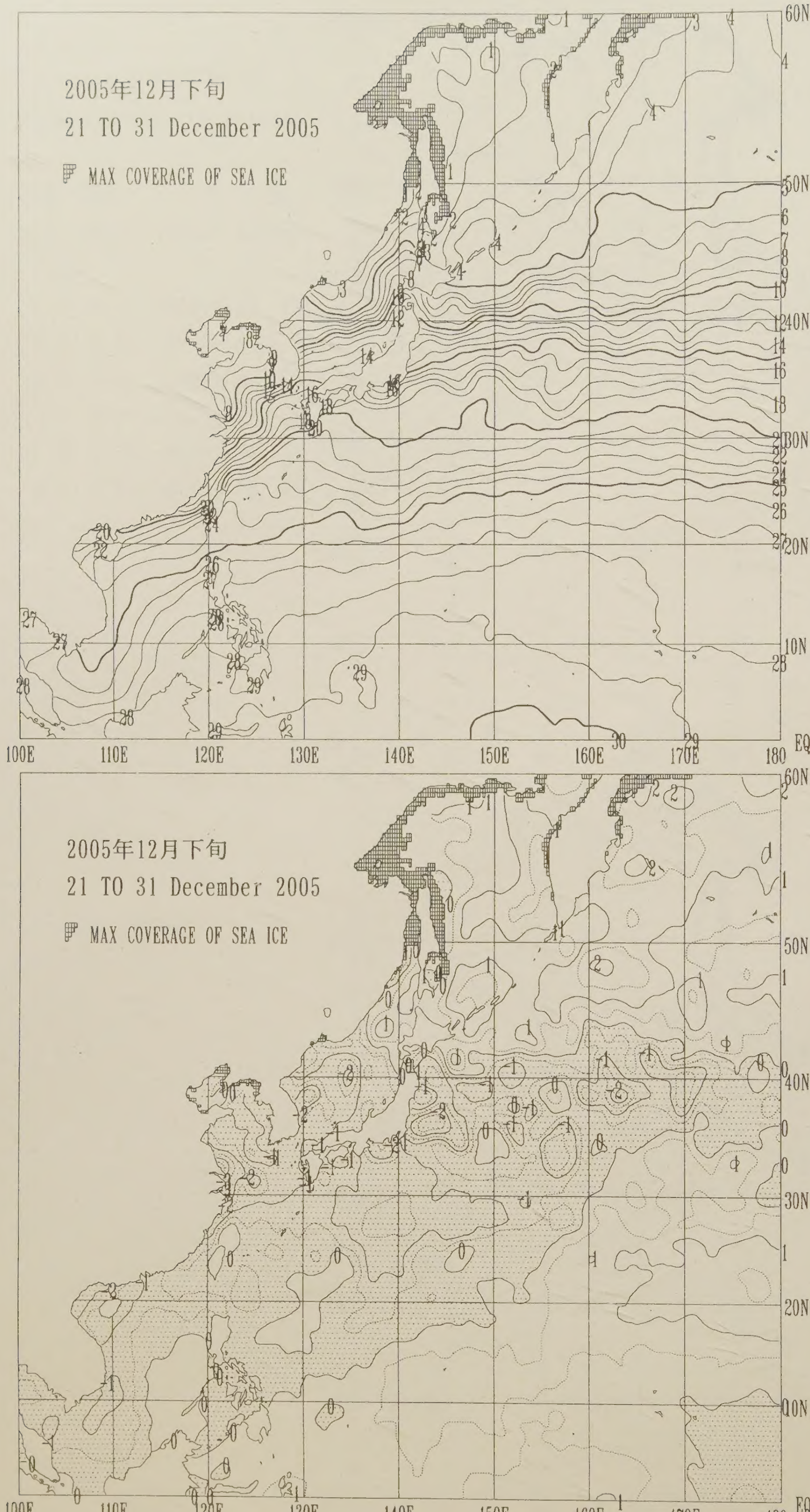
旬平均沿岸水温(℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	21.4	-1.1
御前崎(47655)	12.6	-1.2
小名浜(47598)	11.3	-2.0
宮　古(47585)	11.8	-0.1
江　差(47428)	8.8	0.7
浜　田(47755)	14.2	-0.9

第2図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(2005年12月中旬)

Fig. 2 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 2nd ten-day period in December 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.

Ten-day mean SST & Anomalies

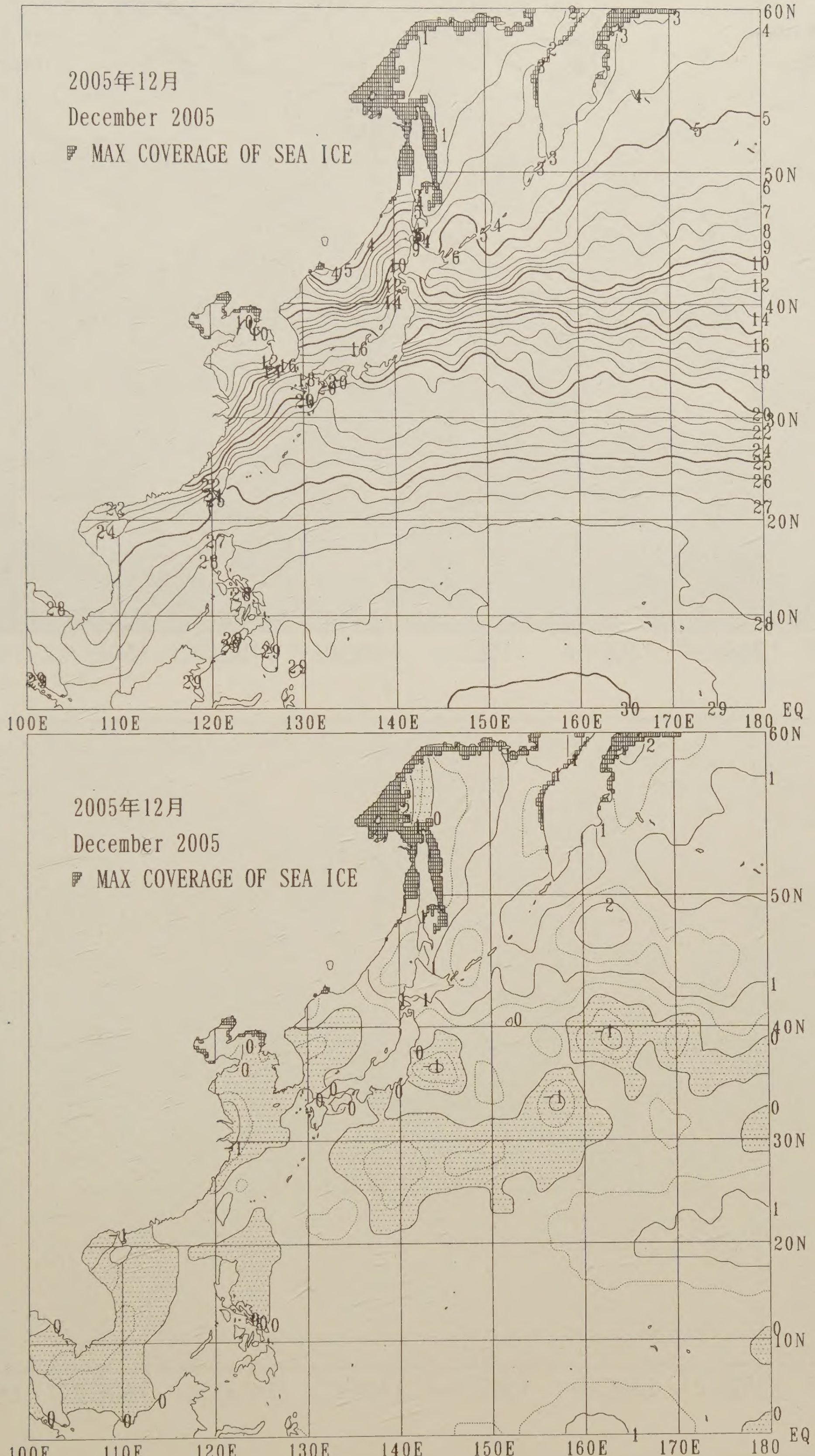


旬平均沿岸水温 (℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣 (47918)	21. 2	-0. 8
御前崎 (47655)	10. 6	-2. 4
小名浜 (47598)	9. 8	-2. 5
宮　古 (47585)	10. 6	-0. 3
江　差 (47428)	8. 7	1. 0
浜　田 (47755)	12. 4	-1. 7

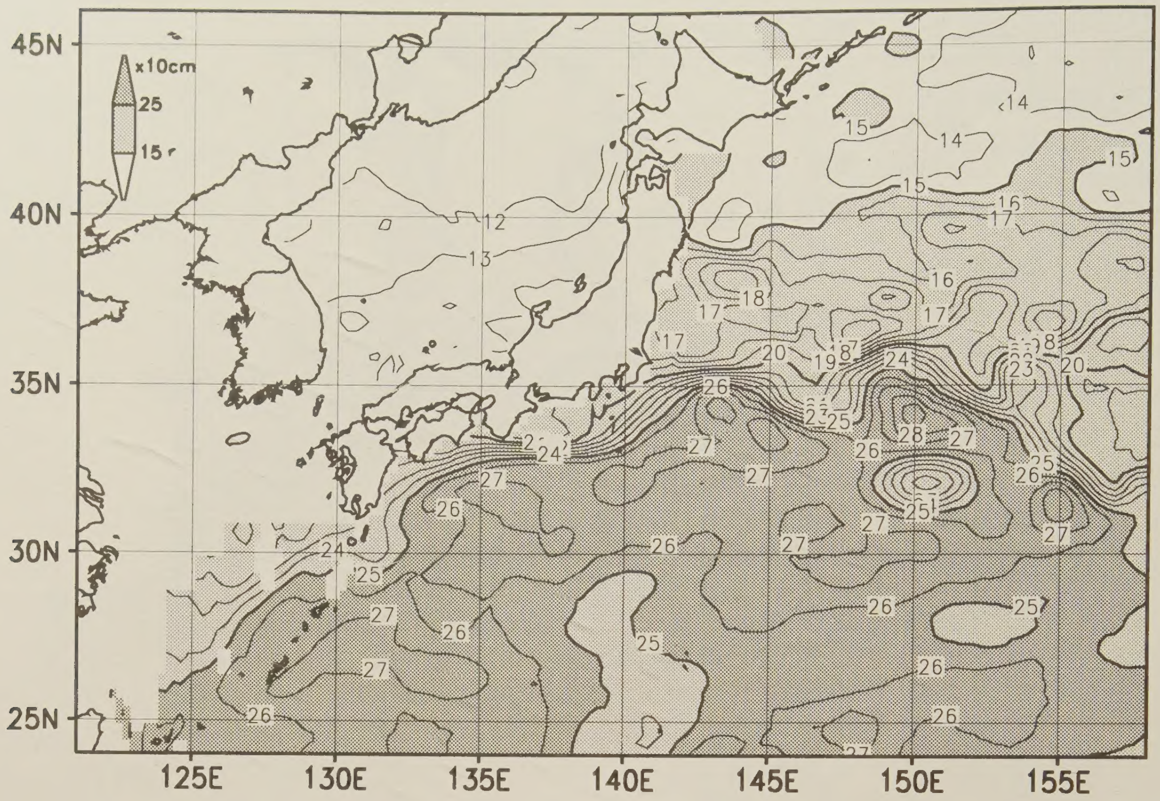
第3図 北西太平洋旬平均海面水温図 (上) 及び偏差図 (下) (2005年12月下旬)

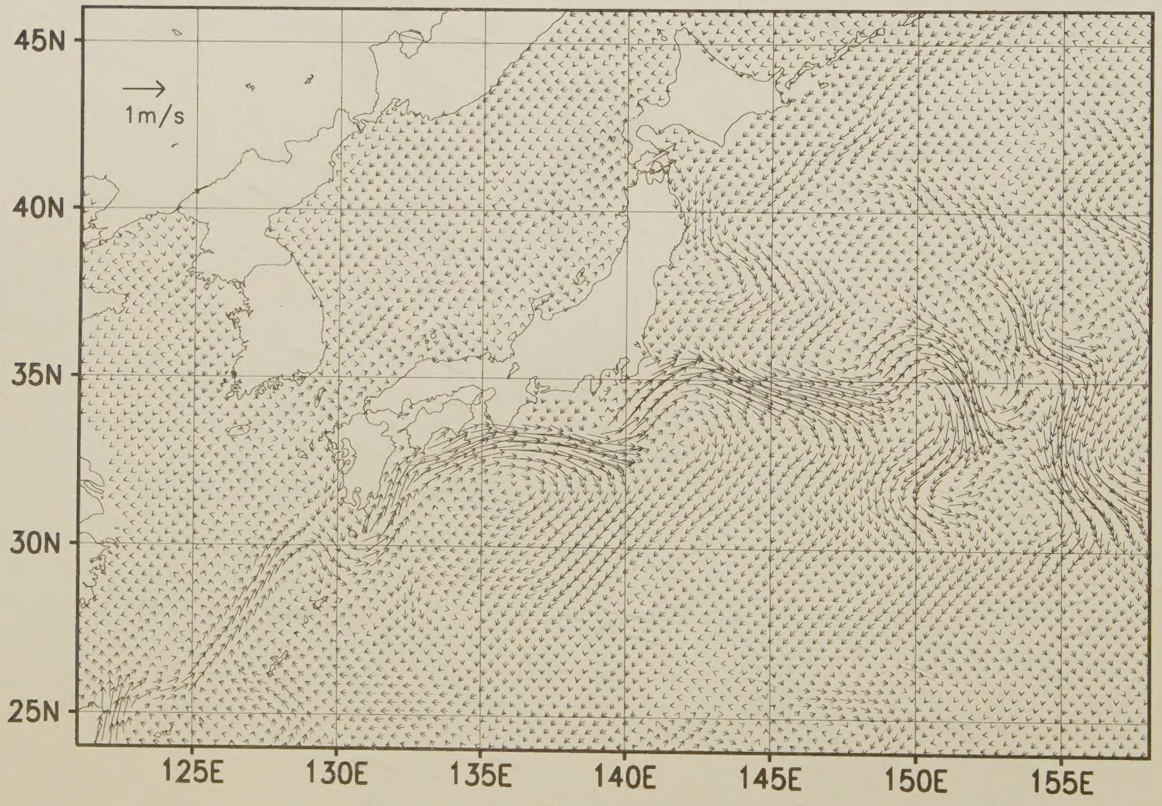
Fig. 3 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 3rd ten-day period in December 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0. 5°C are shown by broken lines. Negative anomalies are stippled.



第4図 北西太平洋月平均海面水温図(上)及び偏差図(下)(2005年12月)

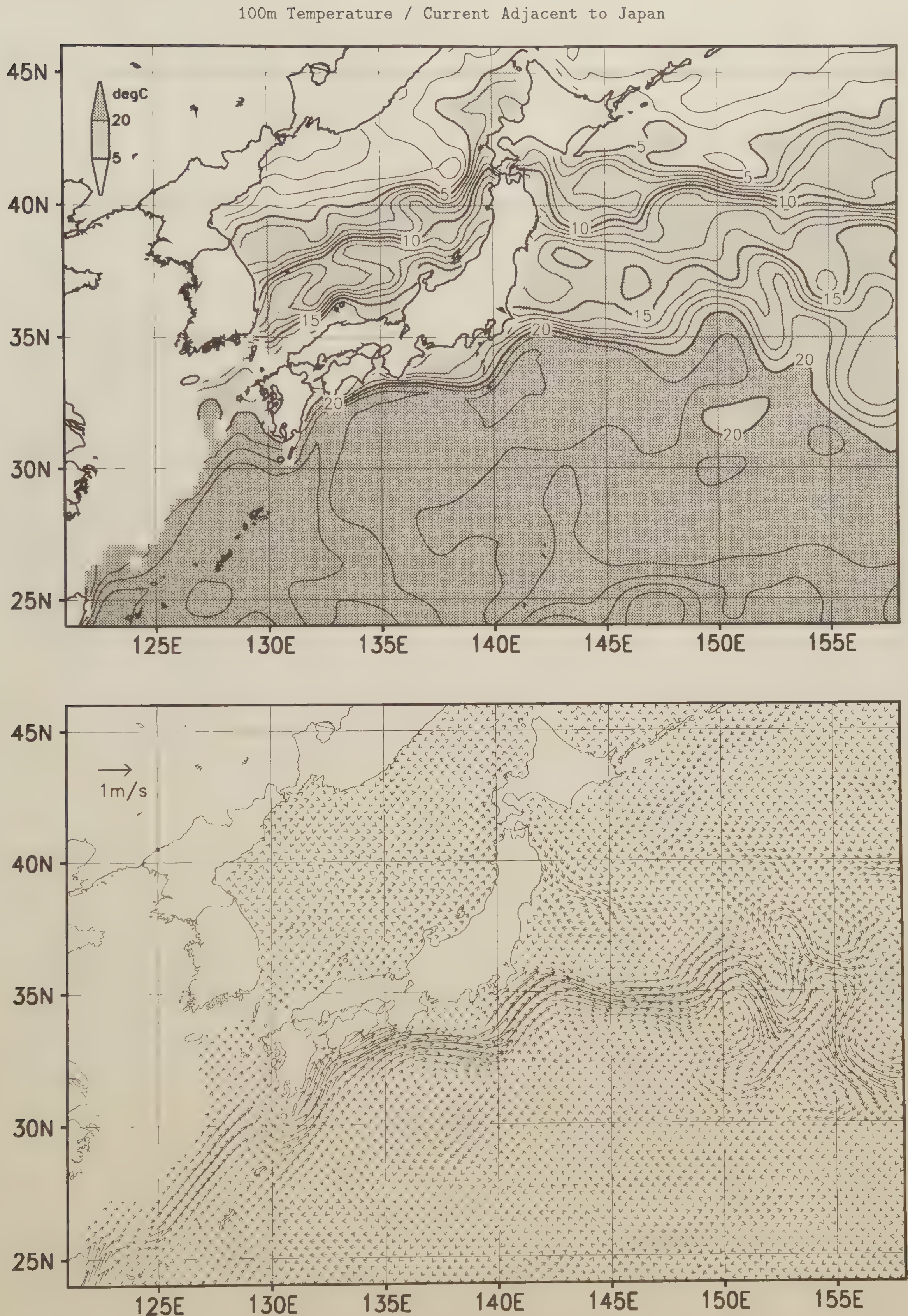
Fig. 4 Monthly mean SST (top) and anomalies (bottom) in the western North Pacific for December 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.





第 5 図　日本近海月平均海面高度分布図 (上) と海面海流図 (下) (2005 年 12 月)
(海洋総合解析システムによる)

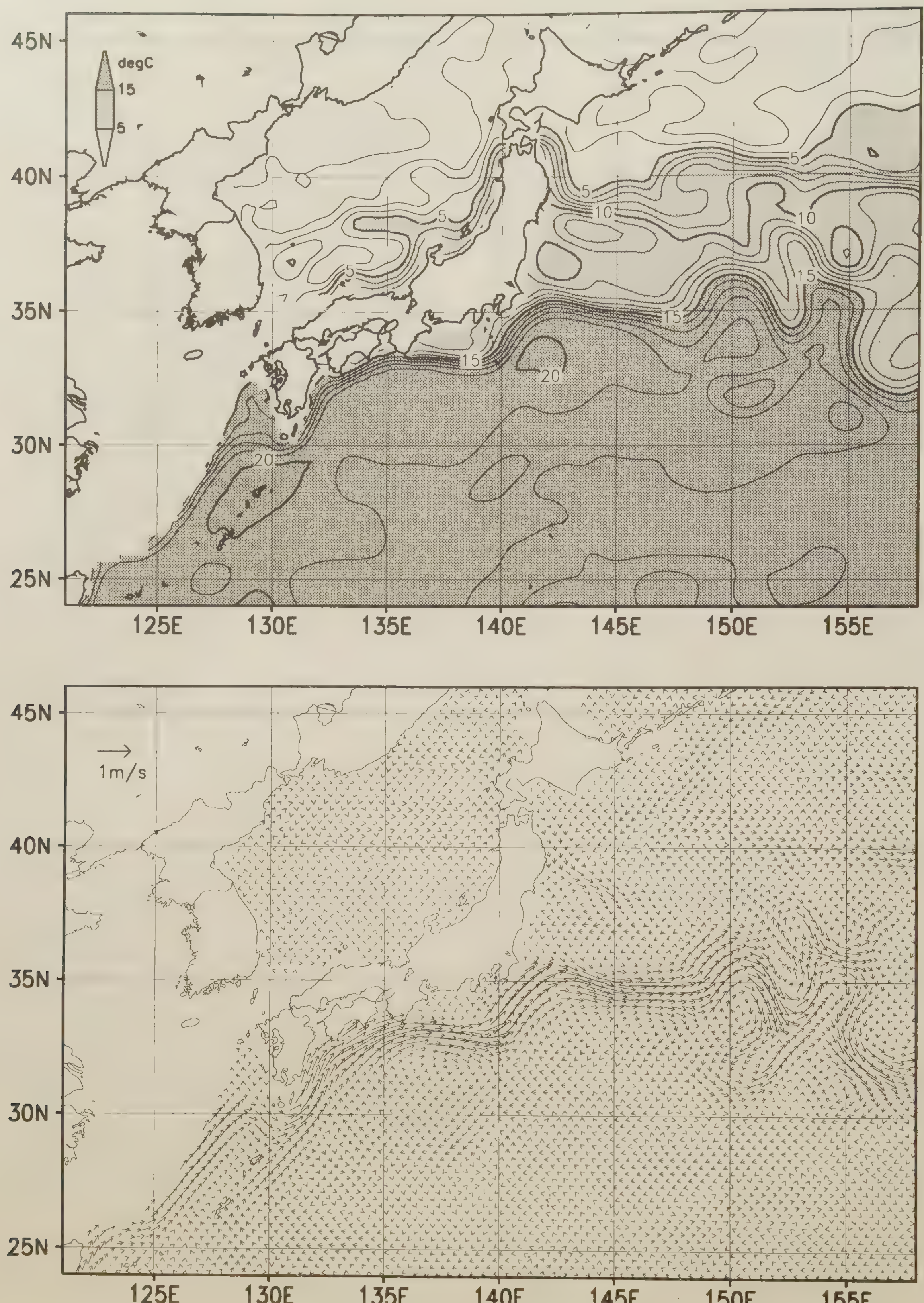
Fig. 5　Monthly mean sea surface height (top) and current (bottom) in seas adjacent to Japan for December 2005. Contour interval is 10cm (top). (calculated by the Ocean Comprehensive Analysis System)



第 6 図　日本近海月平均表層水温図（上）と表層海流図（下）（深さ 100 m）（2005 年 12 月）
（海洋総合解析システムによる）

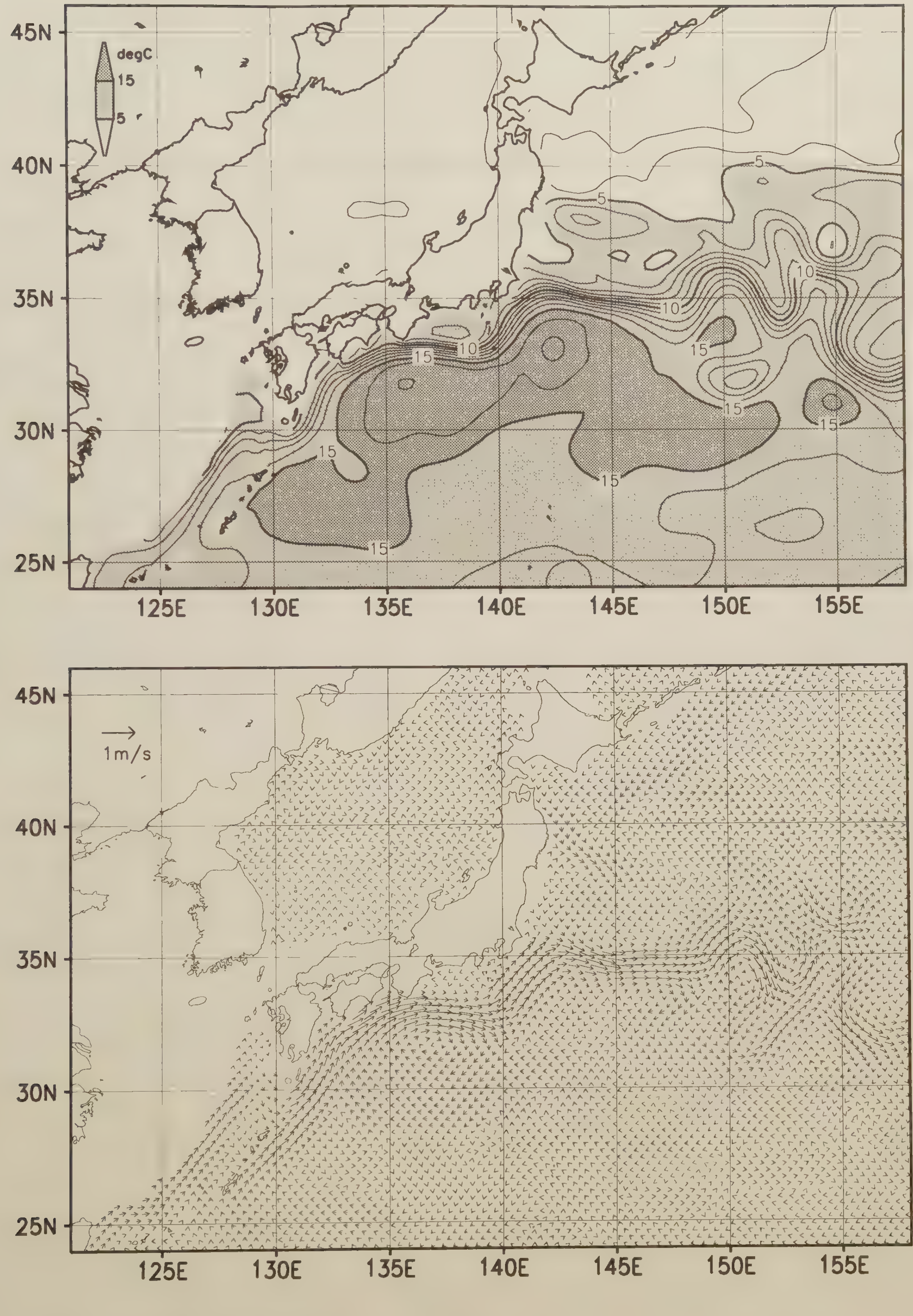
Fig. 6　Monthly mean subsurface (100 m) temperature (top) and current (bottom) in seas adjacent to Japan for December 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)

200m Temperature / Current Adjacent to Japan



第 7 図　日本近海月平均表層水温図（上）と表層海流図（下）（深さ 200 m）（2005 年 12 月）
（海洋総合解析システムによる）

Fig. 7　Monthly mean subsurface (200 m) temperature (top) and current (bottom) in seas adjacent to Japan for December 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)



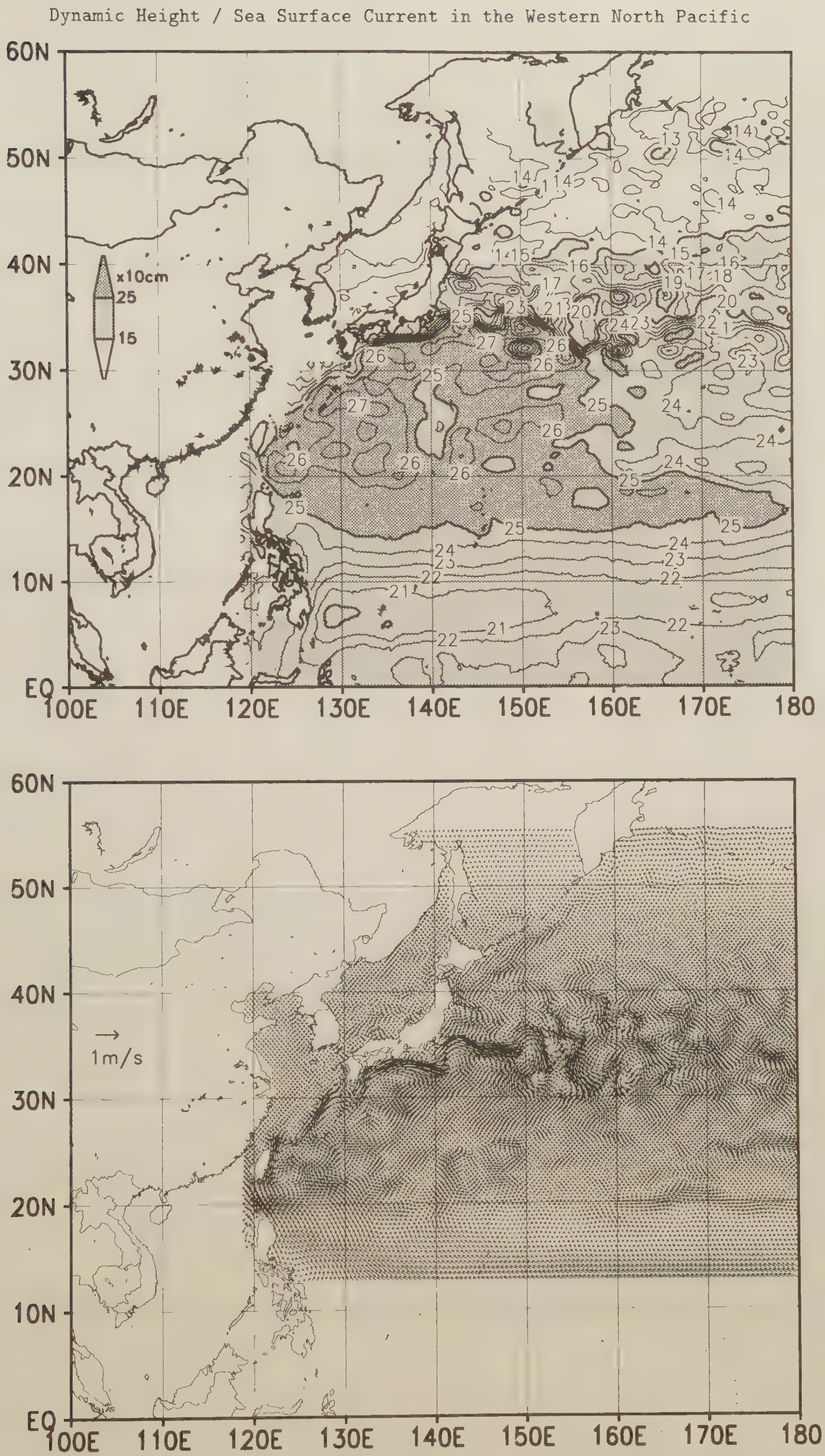
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（海洋総合解析システムによる）

Fig. 8　Monthly mean subsurface (400 m) temperature (top) and current (bottom) in seas adjacent to Japan for December 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)



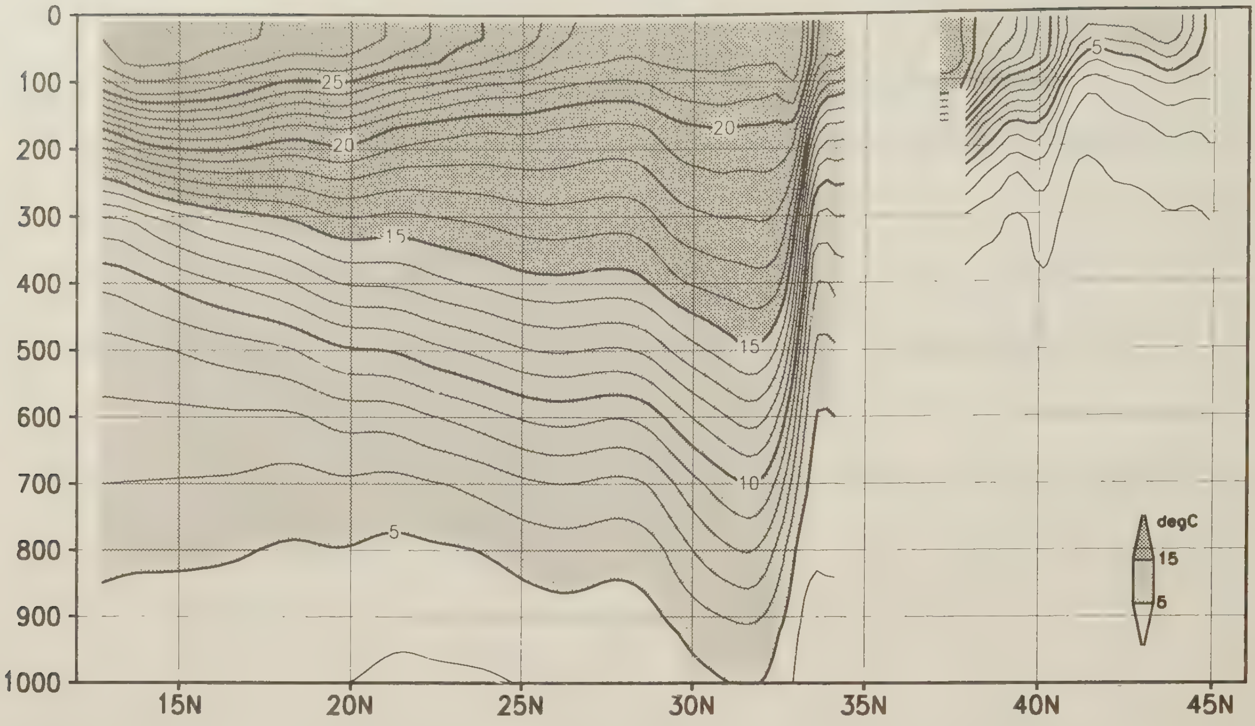
第9図 旬別黒潮流軸図

Fig. 9 Location of the Kuroshio axis



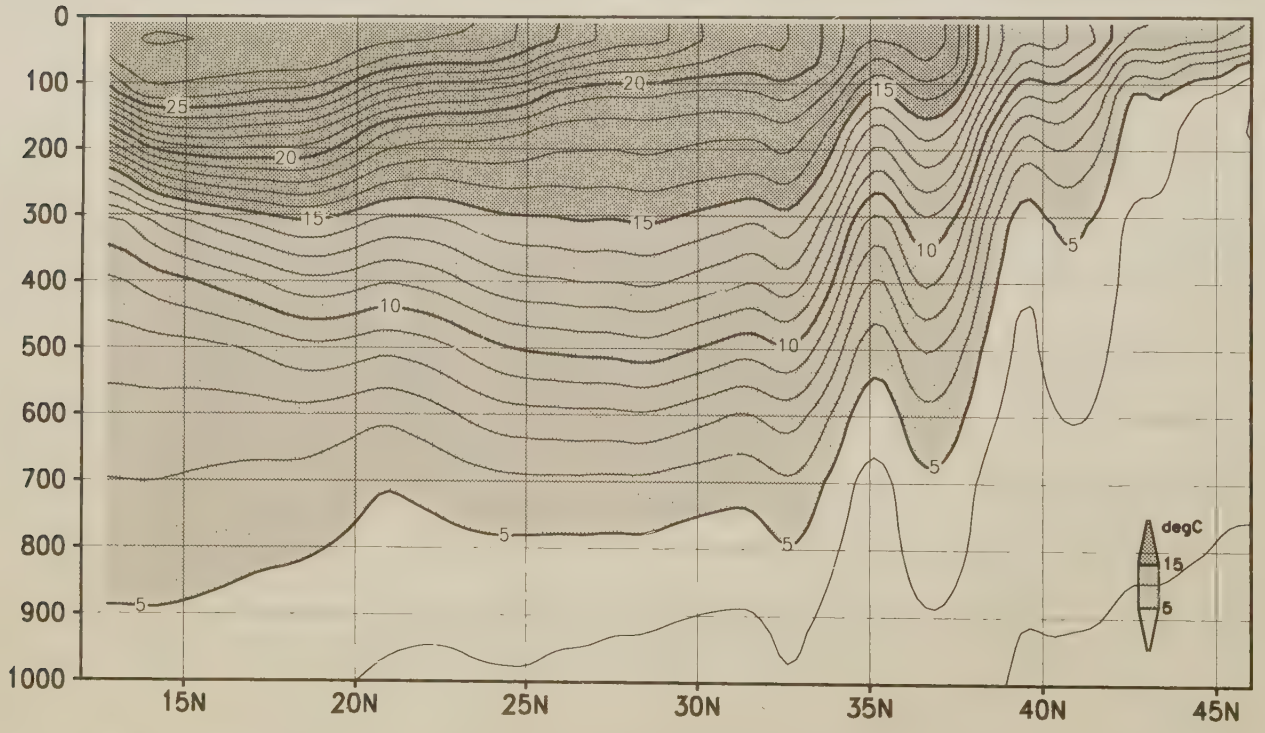
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(海洋総合解析システムによる)

Fig. 10　Monthly mean sea surface height (top) and current (bottom) in the western North Pacific for December 2005. Contour interval is 10cm (top). (calculated by the Ocean Comprehensive Analysis System)



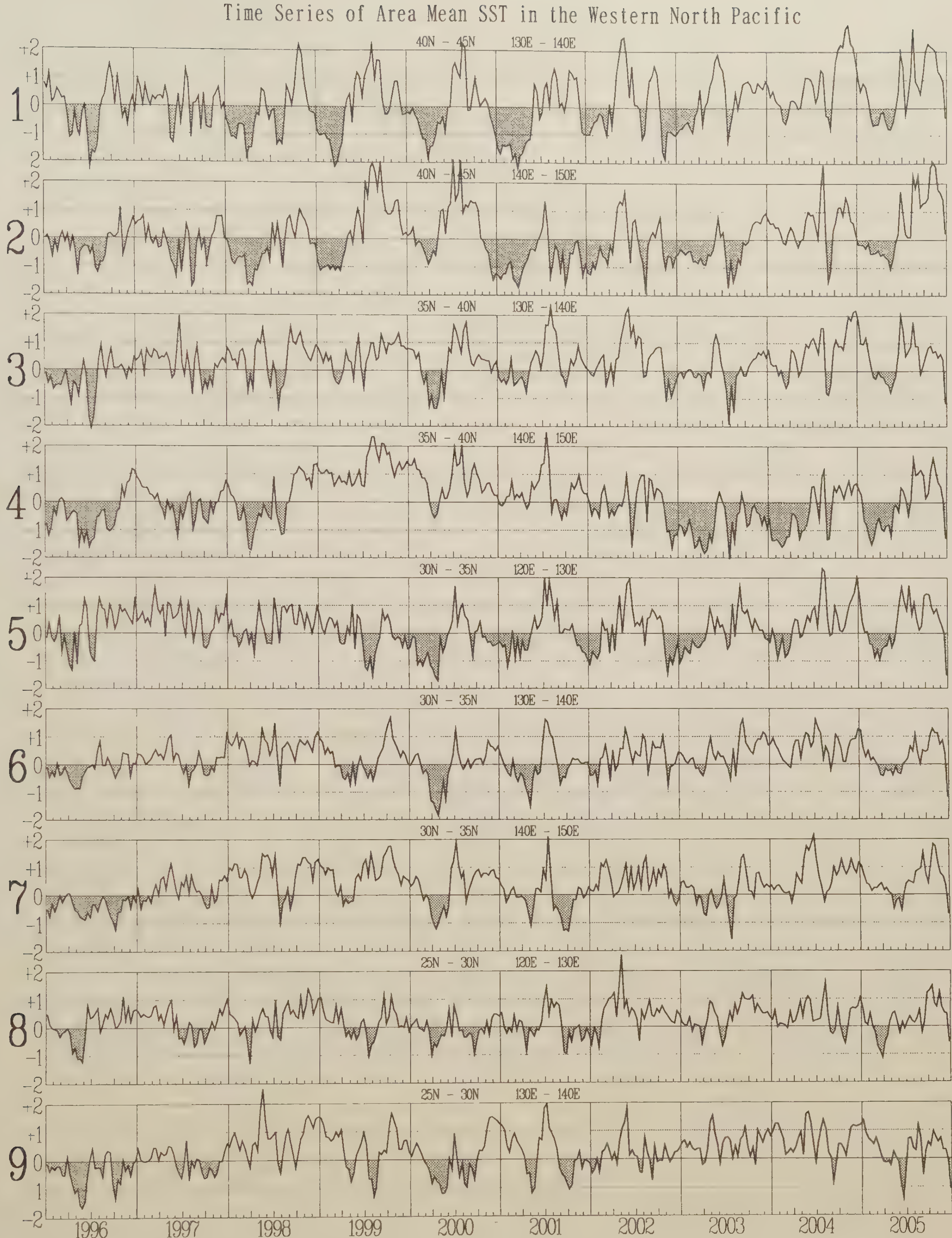
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（海洋総合解析システムによる）

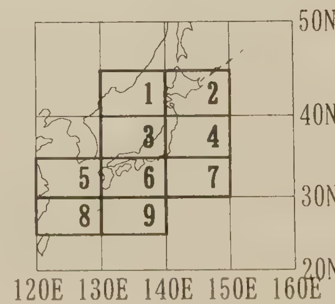
Fig. 11　Vertical cross section of monthly mean temperature along 137 °E for December 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



第 12 図　東経 165° 線に沿う月平均表層水温の鉛直断面図（2005 年 12 月）
（海洋総合解析システムによる）

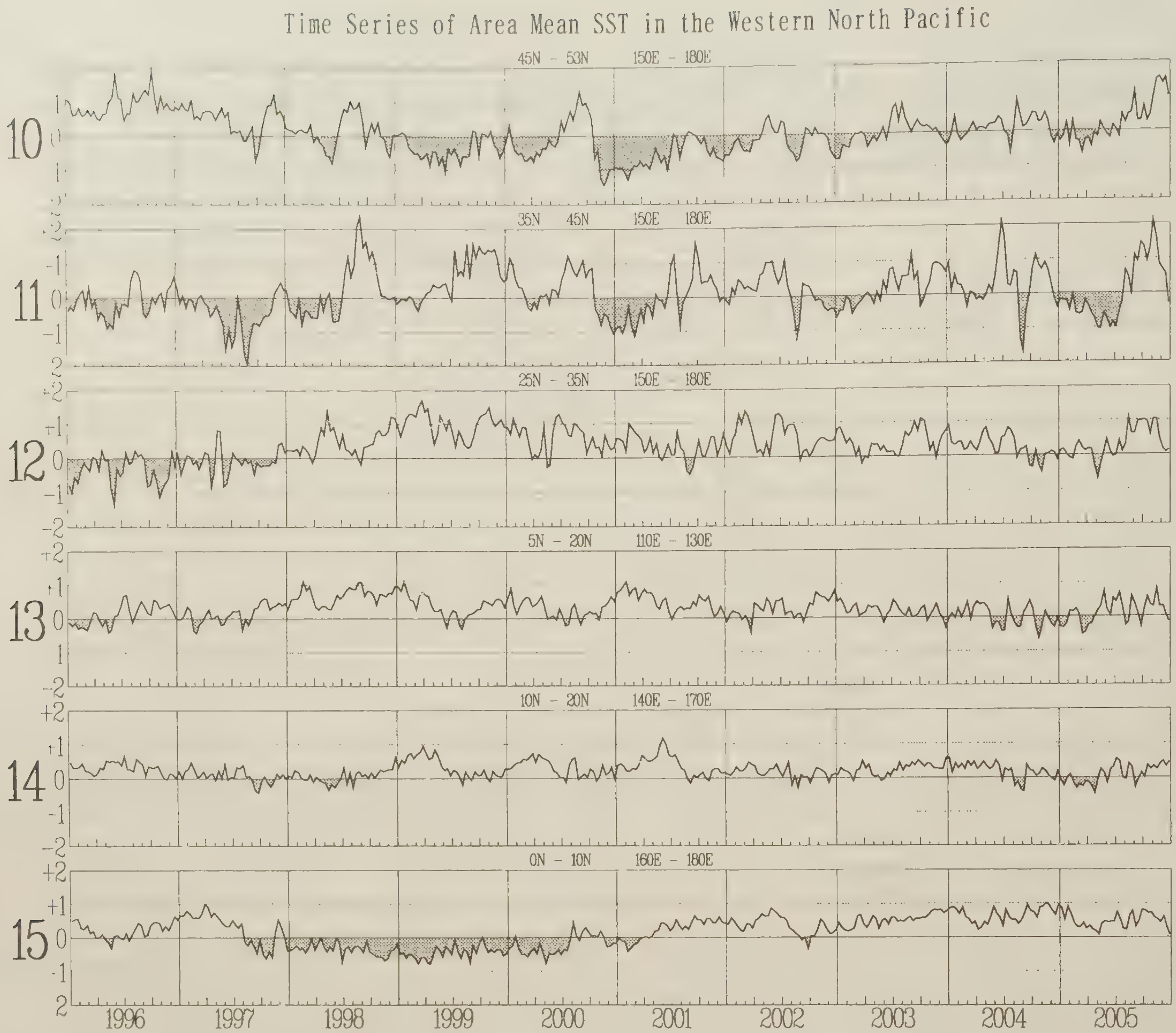
Fig. 12　Vertical cross section of monthly mean temperature along 165 °E for December 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)





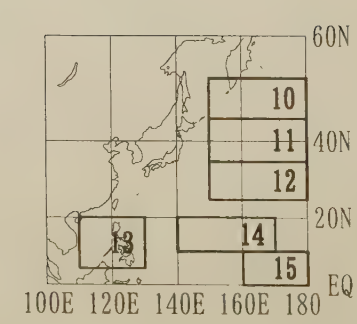
第13図　海域別旬平均海面水温平年偏差時系列図

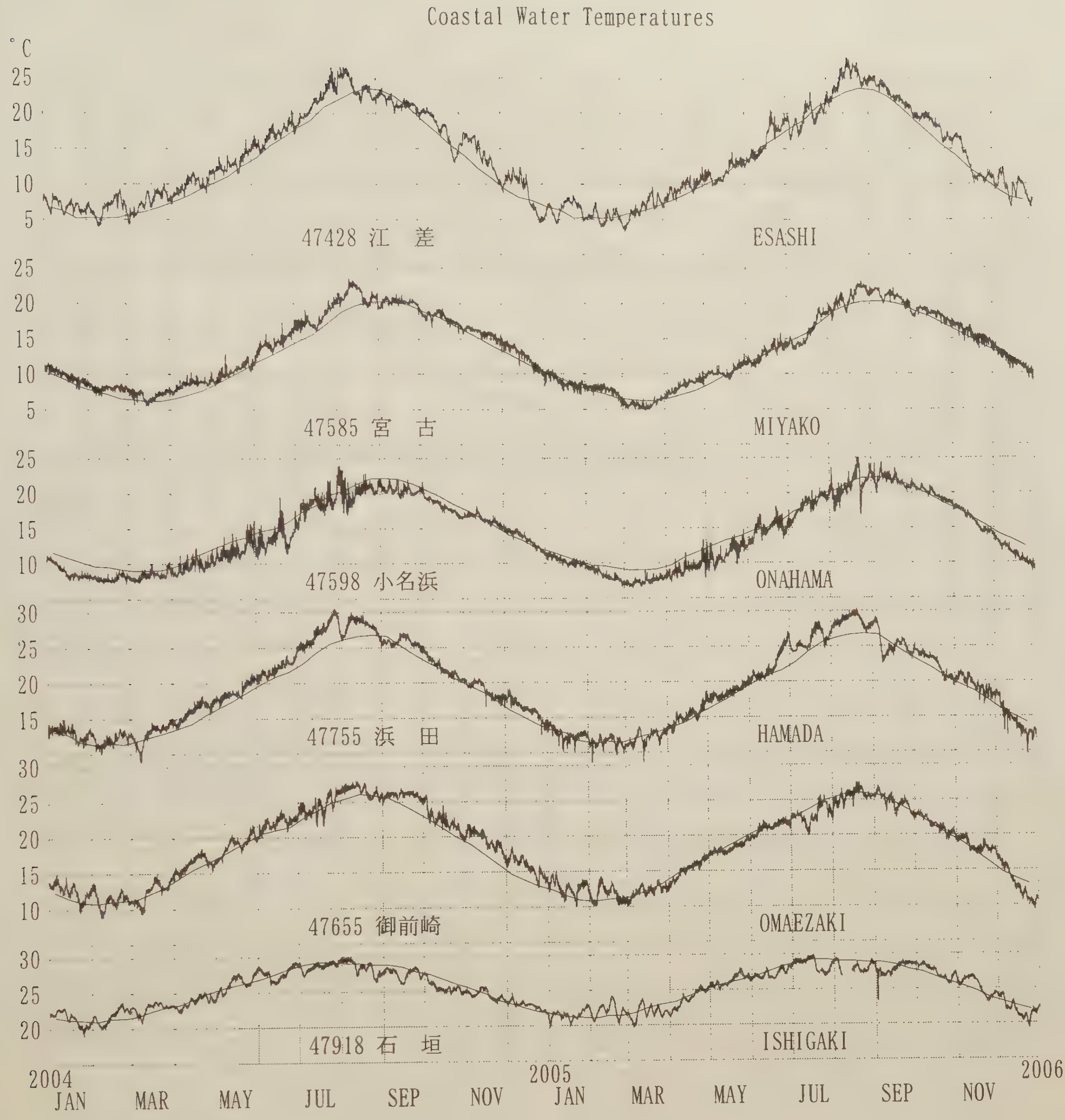
Fig. 13 Time series of the ten-day mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1971-2000).



第13図　海域別旬平均海面水温平年偏差時系列図（つづき）

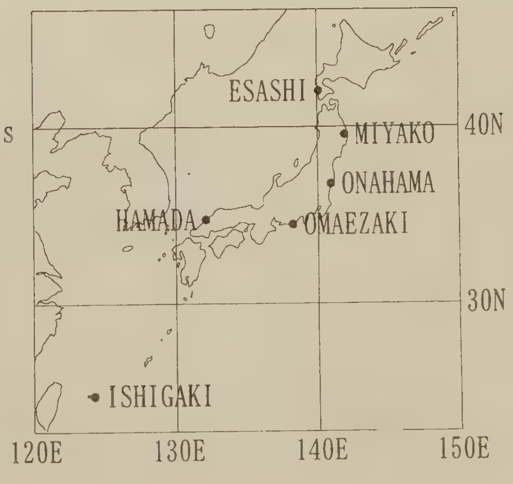
Fig. 13 (continued) Time series of the ten-day mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1971-2000).

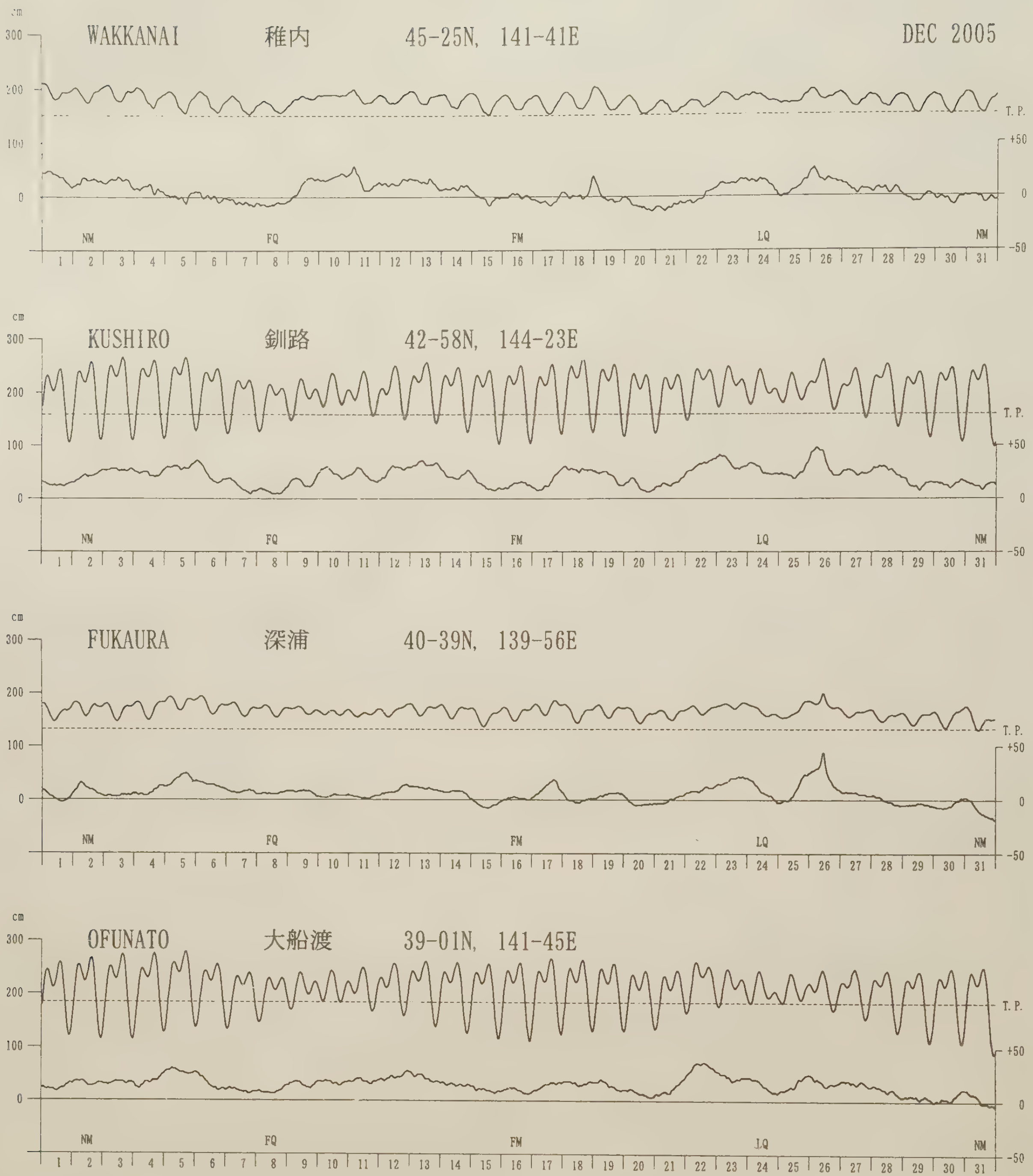




第14図 沿岸水温時系列図

Fig. 14 Time series of hourly coastal water temperatures (°C) measured at 6 coastal stations of the JMA shown in the right panel.
Thin lines show ten-day mean climatology.

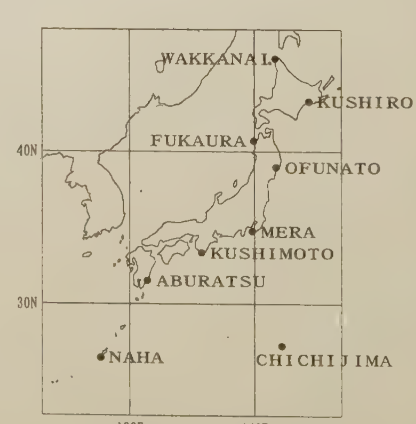


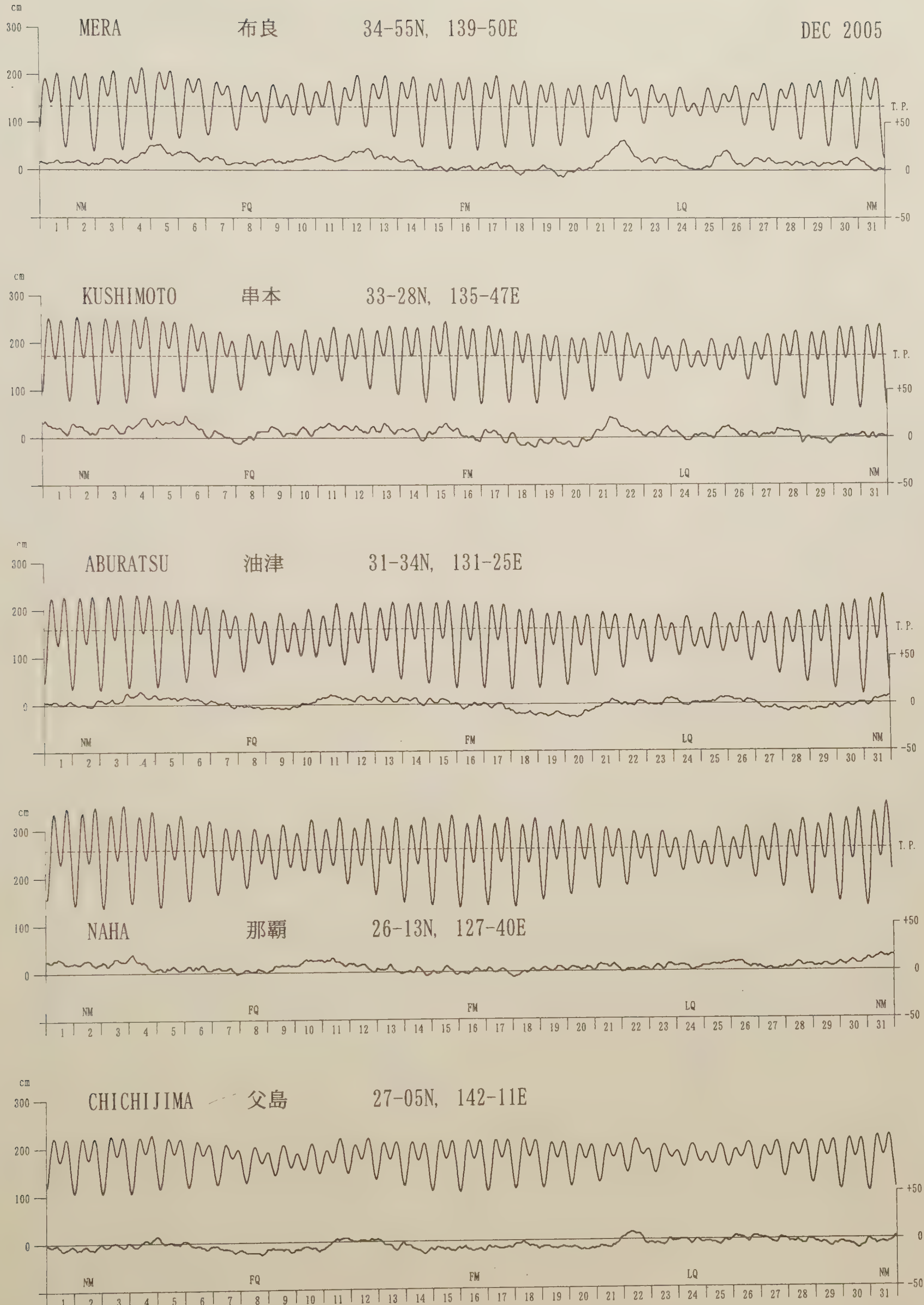


第15図 沿岸潮位時系列図（2005年12月）

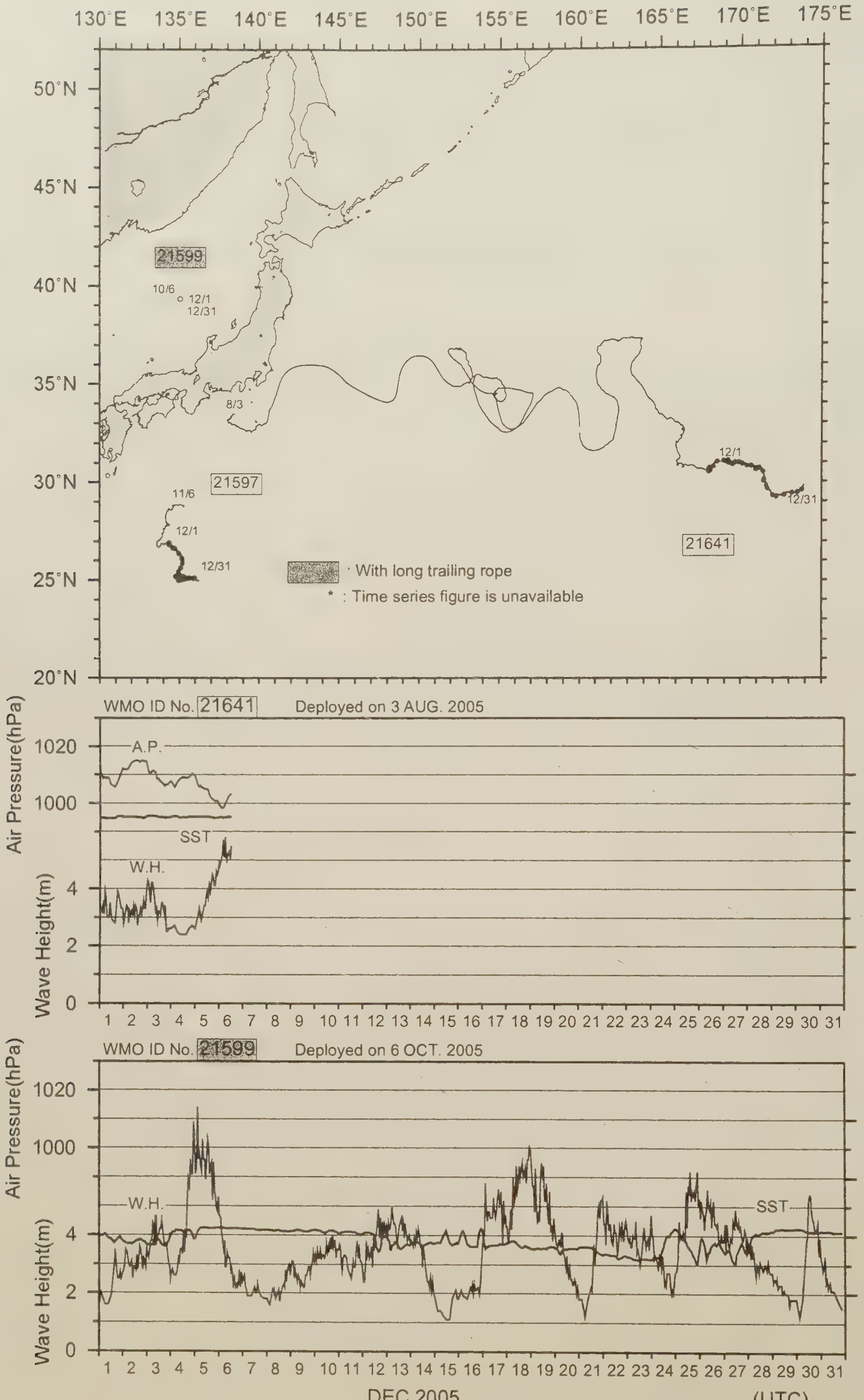
Fig. 15 Time series of hourly sea level observation (upper line) and its anomalies (lower line) at 9 stations of the JMA in the right panel.
Short term variations are filtered out from raw data.

NM: new moon, FQ: first quarter
FM: full moon, LQ: last quarter
T. P. : Mean sea level of Tokyo Bay (Tokyo Peil)

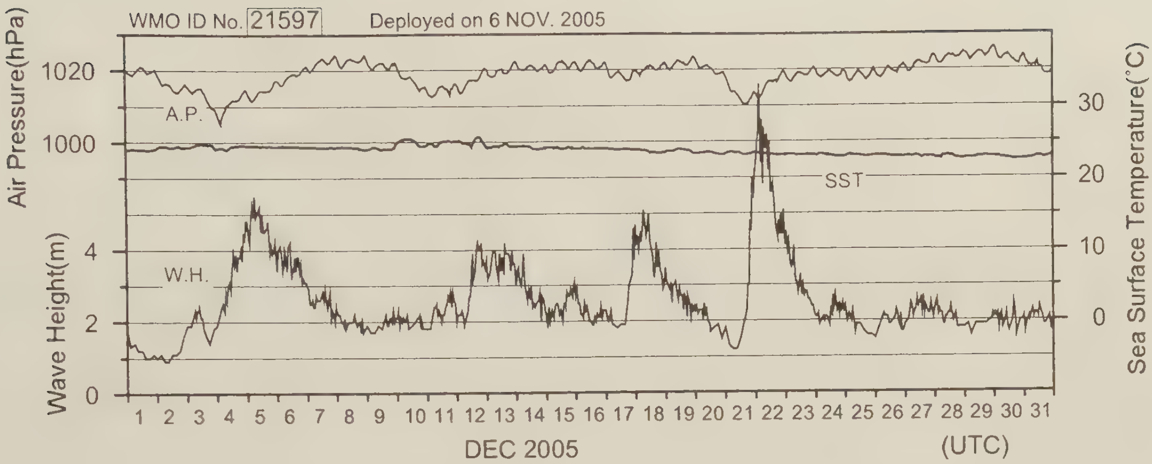




第15図 つづき
Fig. 15 (continued)

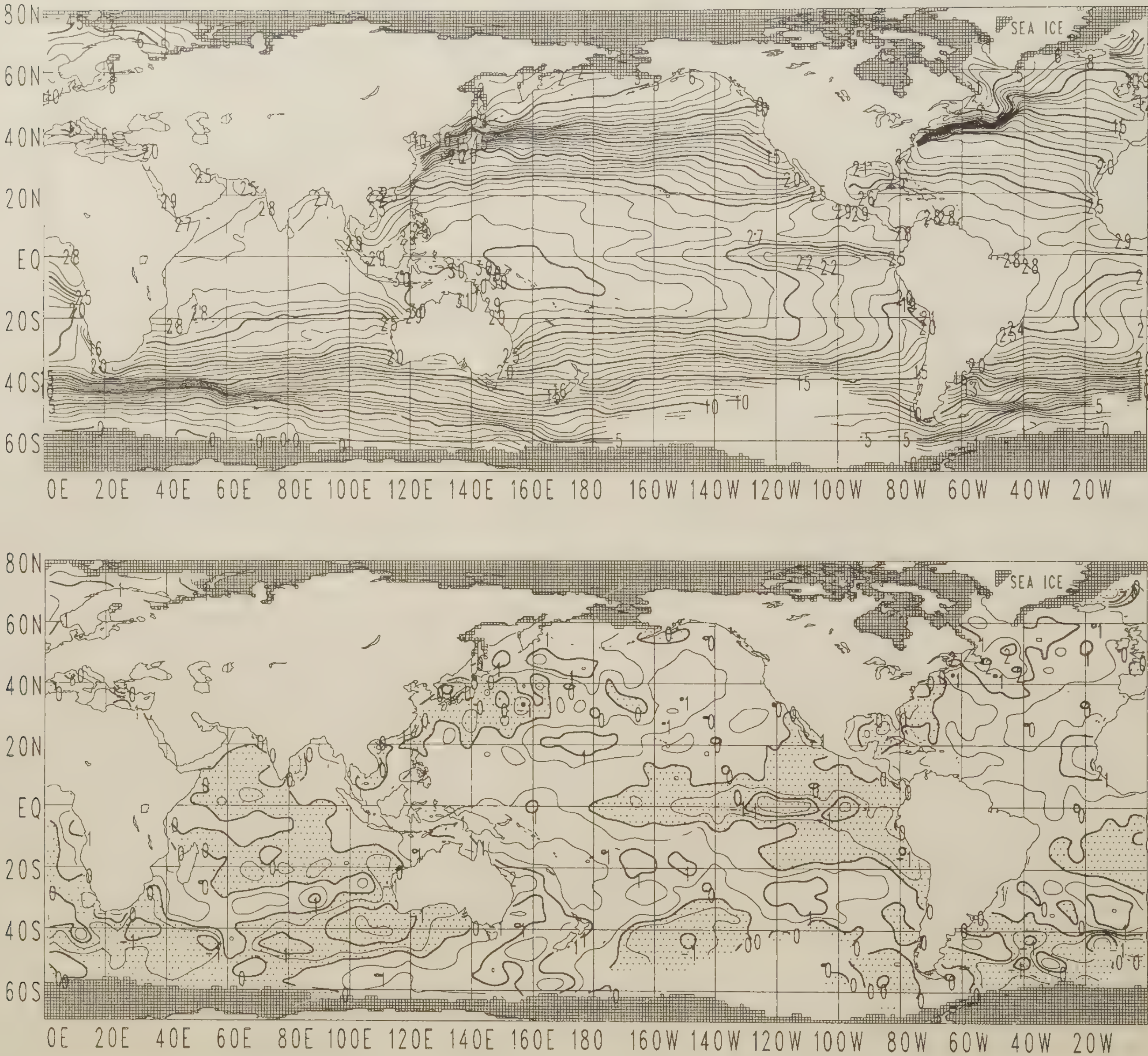


第16図　漂流型海洋気象ブイロボットの軌跡と観測要素の時系列図
Fig.16　Time series of JMA drifting buoy observation.
The upper panel shows paths of the buoys. Circles denote the position at 00h UTC everyday.
The lower panel shows time series of observation data.



第16図 つづき
Fig.16 (continued)

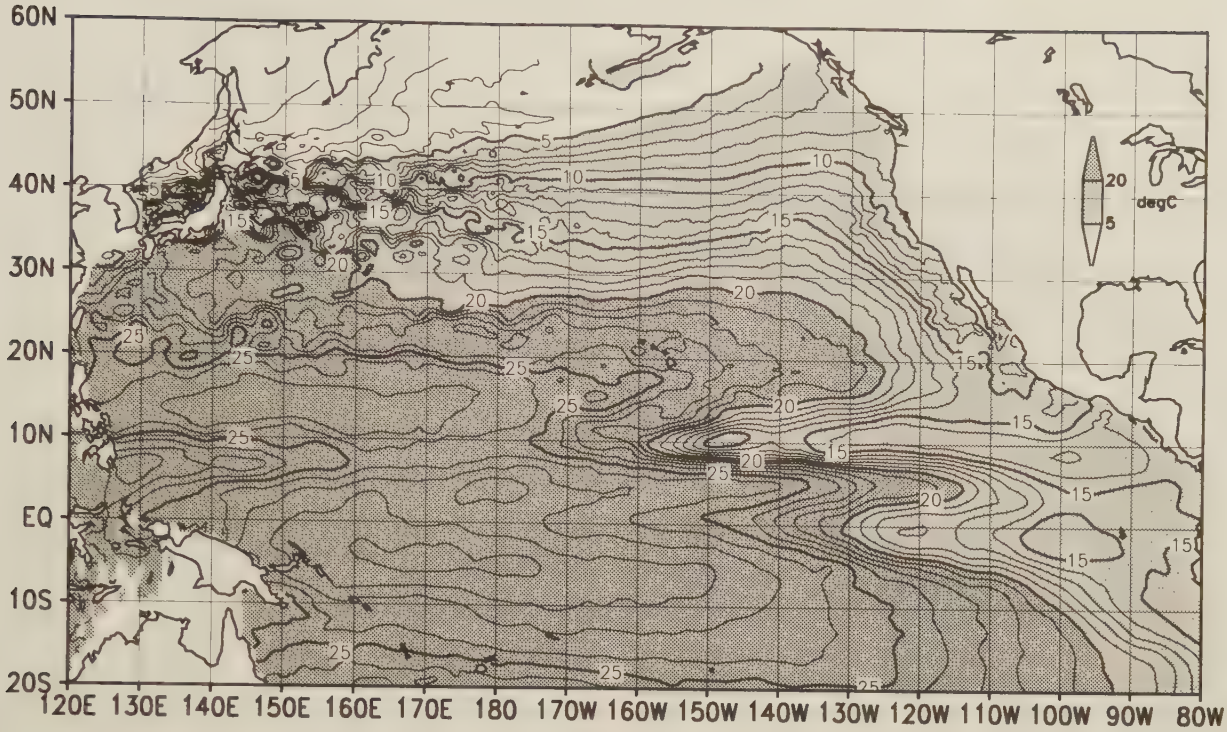
SST & Anomalies in the Global Ocean



第17図　全球月平均海面水温図（上）及び偏差図（下）（2005年12月）

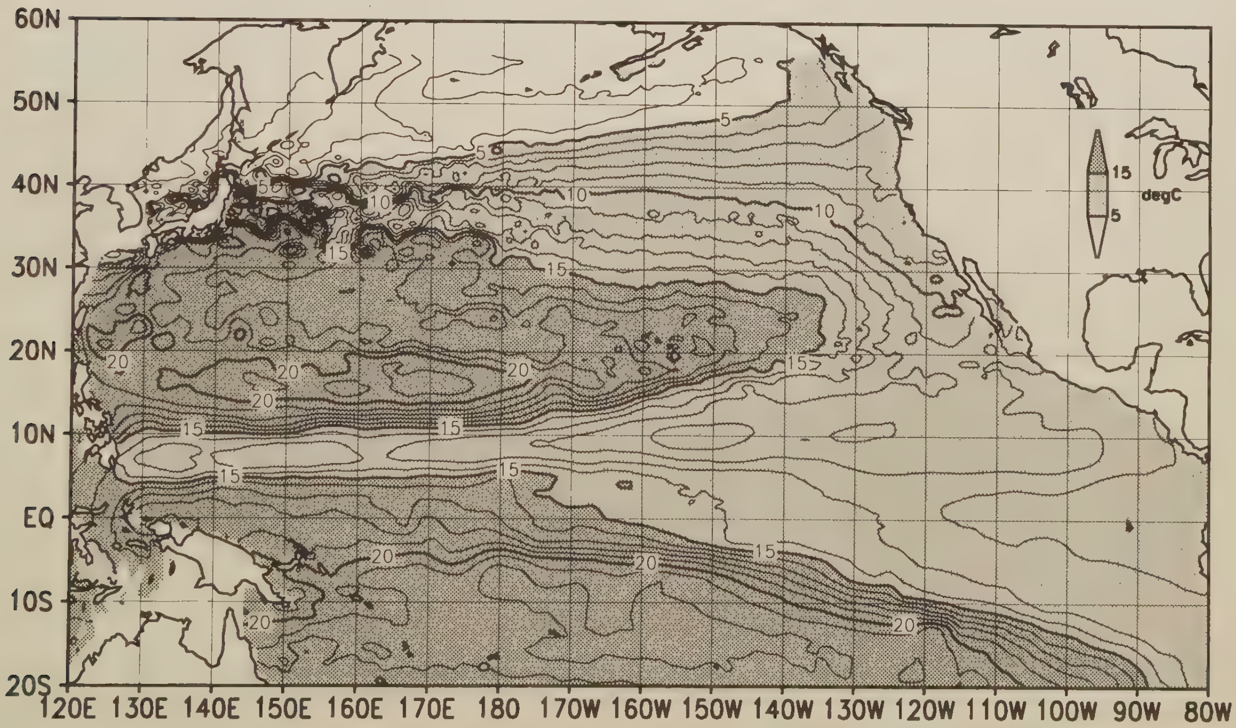
Fig. 17　Monthly mean SST over the global ocean (top) and anomalies (bottom) for December 2005.　Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of ±0.5°C are shown by thin lines.　Negative anomalies are stippled.　Maximum coverage of sea ice is shaded.　Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).

100m / 200m Temperature in the Pacific Ocean



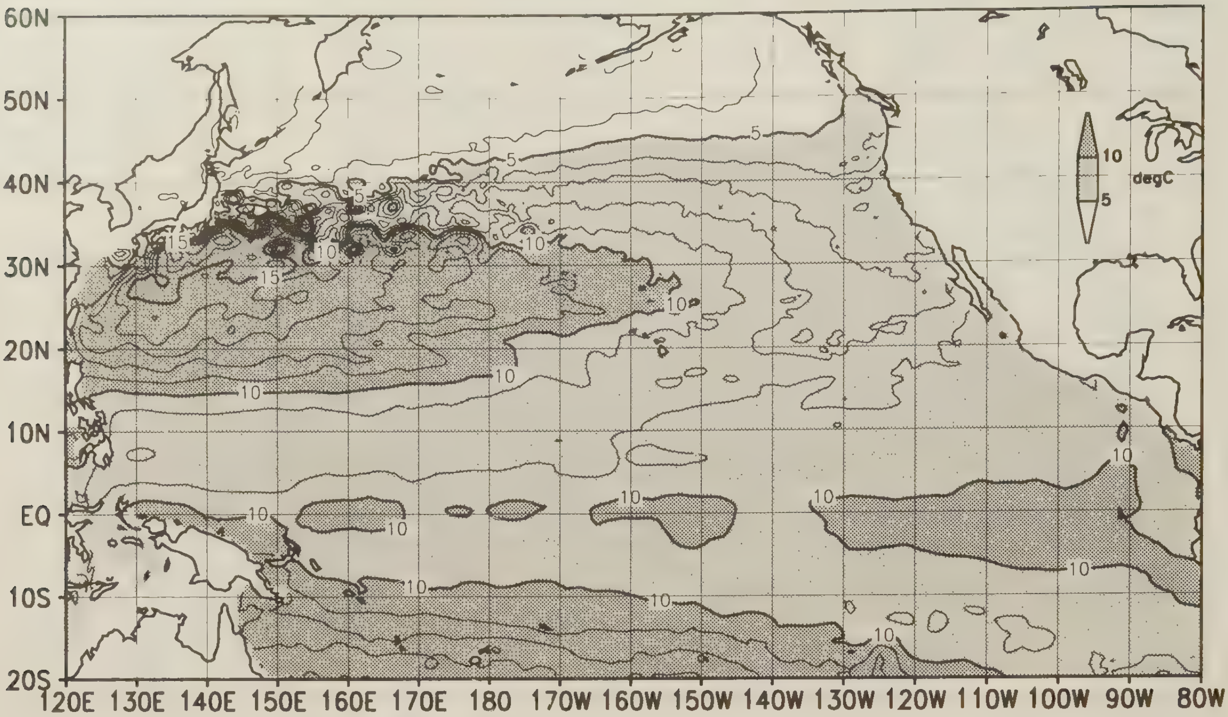
第 18 図　太平洋月平均表層水温図（深さ 100 m）　(2005 年 12 月)
（海洋総合解析システムによる）

Fig. 18　Monthly mean subsurface (100 m) temperature in the Pacific Ocean for December 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



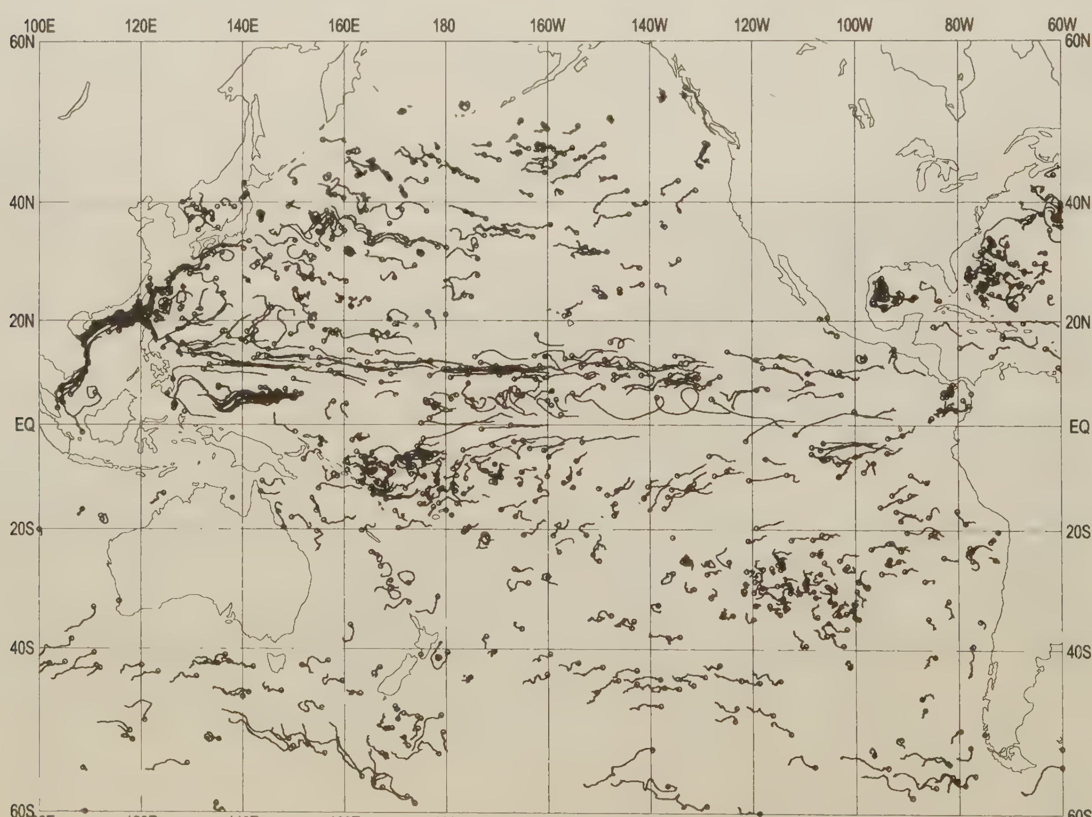
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（海洋総合解析システムによる）

Fig. 19　Monthly mean subsurface (200 m) temperature in the Pacific Ocean for December 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



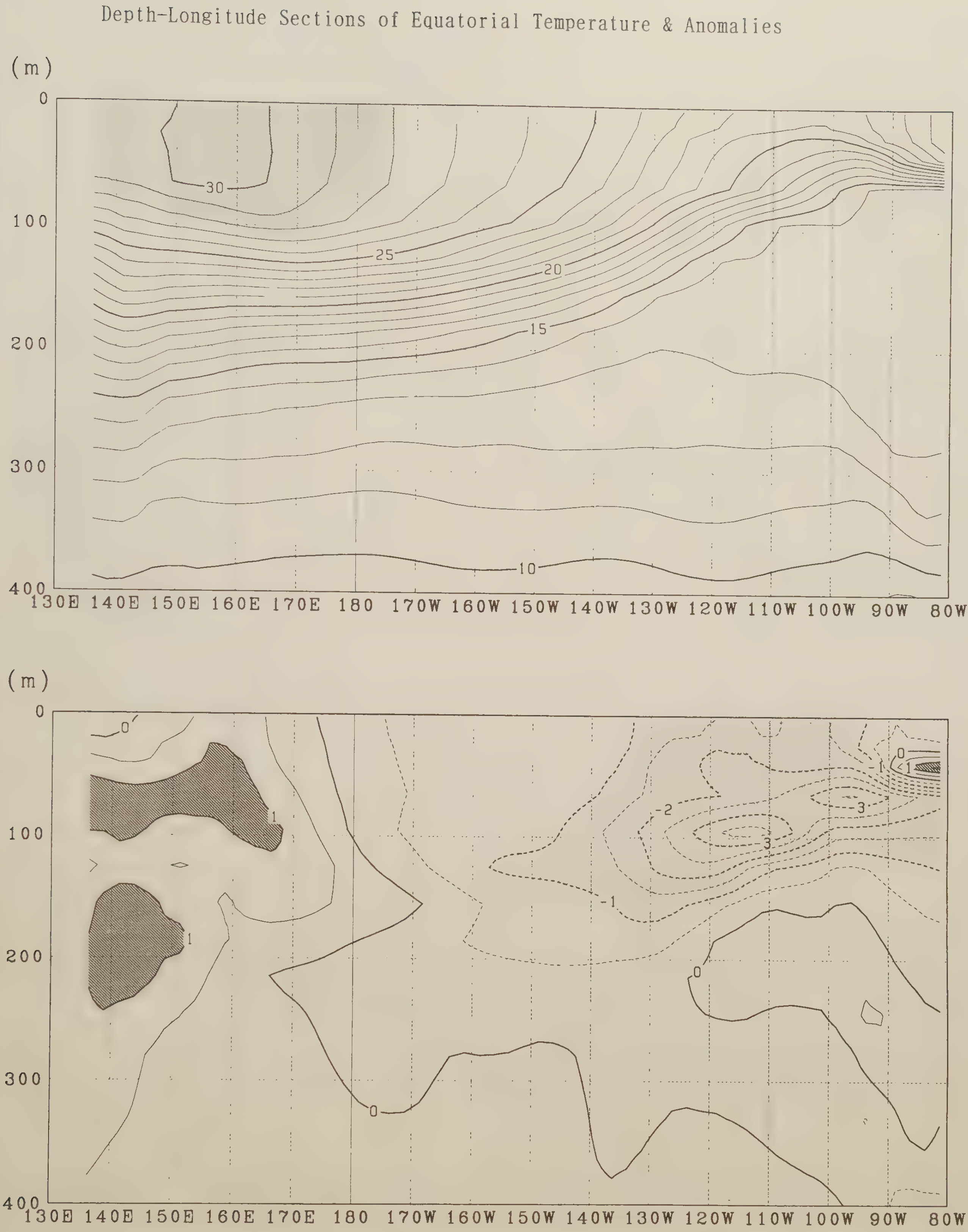
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（海洋総合解析システムによる）

Fig. 20　Monthly mean subsurface (400 m) temperature in the Pacific Ocean for December 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



第 21 図　太平洋ブイ流跡図（2005 年 12 月）

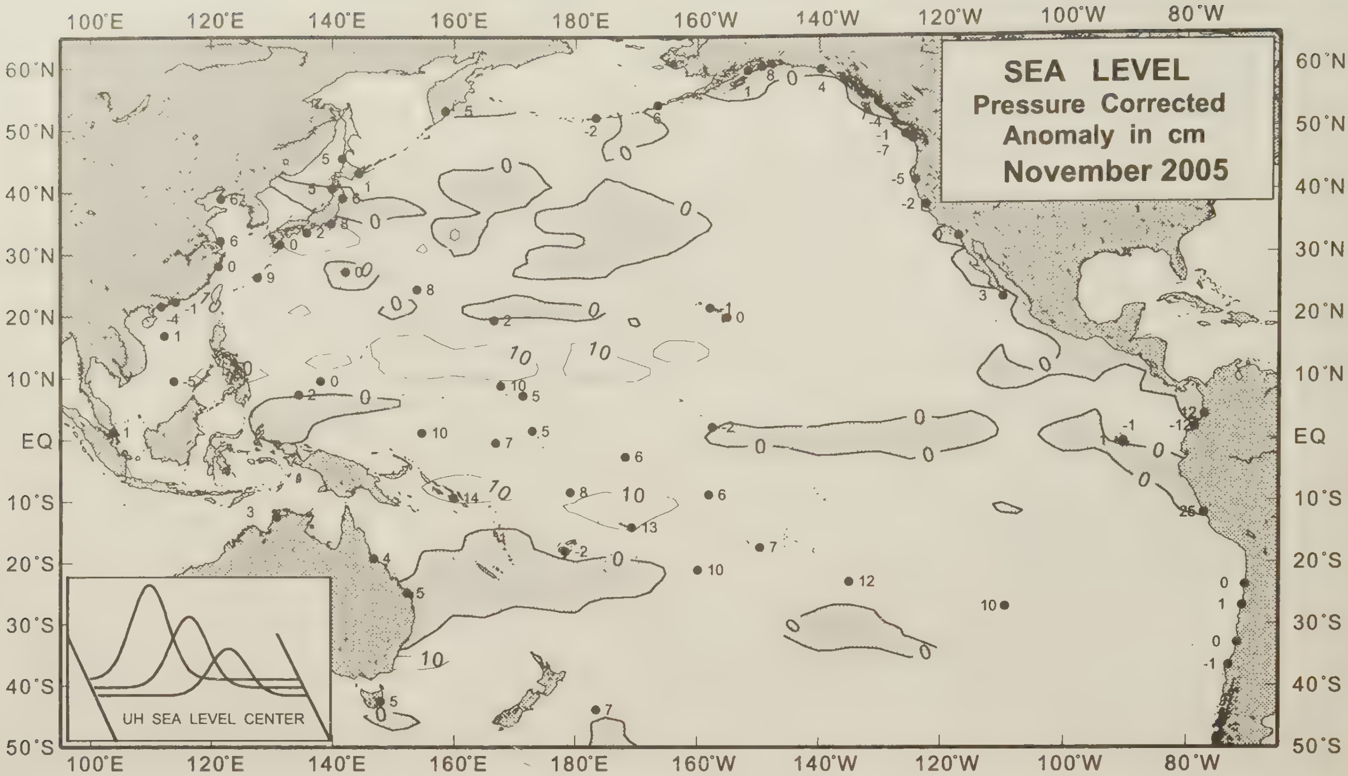
Fig. 21　Trajectories of drifting buoys in the Pacific Ocean during December 2005. Each track is for one buoy. Small circles represent the last positions for the month.



第22図　太平洋赤道に沿う表層水温（上）及び偏差（下）の深度－経度断面図（2005年12月）

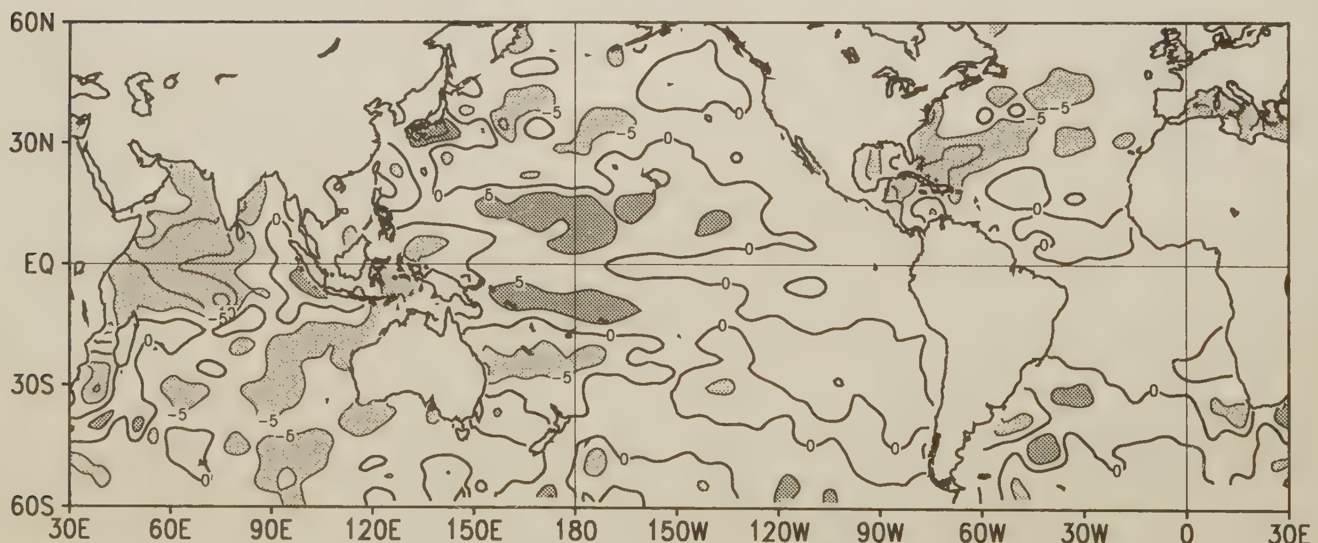
Fig. 22 Depth-longitude sections of temperature (top) and anomalies (bottom) along the equator in the Pacific Ocean for December 2005. Data are derived from the Ocean Data Assimilation System of JMA. Contour intervals are 1°C (top) and 0.5°C (bottom). Values greater than 28°C in the top panel are shaded. In the bottom panel, values greater than 1°C are dark-shaded and values less than -1°C are light-shaded. Anomalies are computed from 1987-2004 base period means.

Sea Level Anomalies / Sea Surface Height Anomalies



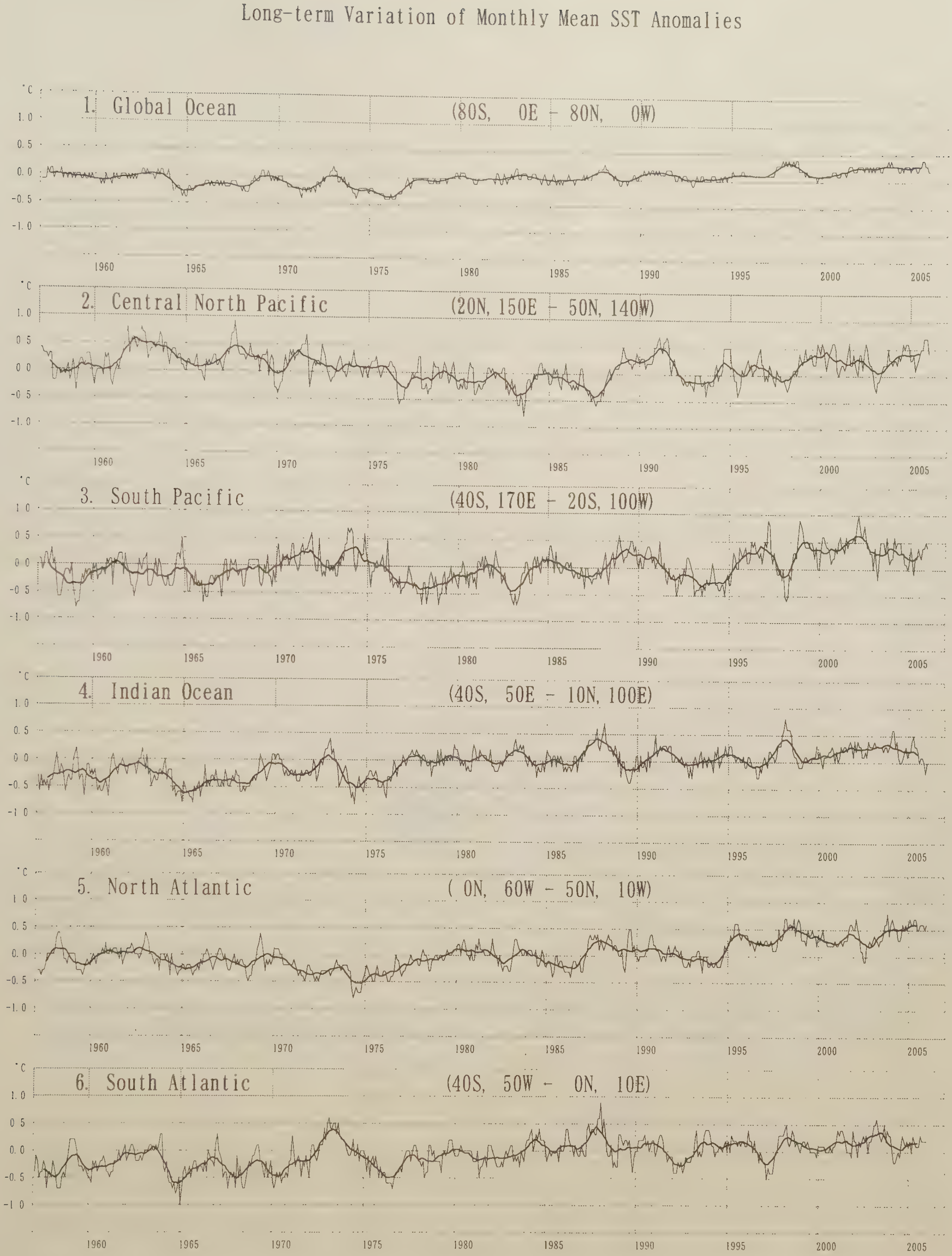
第 23 図　太平洋月平均海面水位偏差図（2005 年 11 月）

Fig. 23　Monthly sea level anomalies for November 2005 obtained from mean sea level (1993-2001) adjusted for atmospheric pressure. This figure is prepared by the SOC of ISLP-PAC, Department of Oceanography, University of Hawaii.



第 24 図　全球月平均海面高度偏差図（2005 年 11 月）

Fig. 24　Monthly sea surface height anomalies in the global ocean derived from the altimeter data of Jason-1 for November 2005. Contour interval is 5 cm. Positive anomalies exceeding +5 cm are dark-shaded and negative anomalies exceeding -5 cm are light-shaded. Anomalies are computed from 1993-1998 base period means.

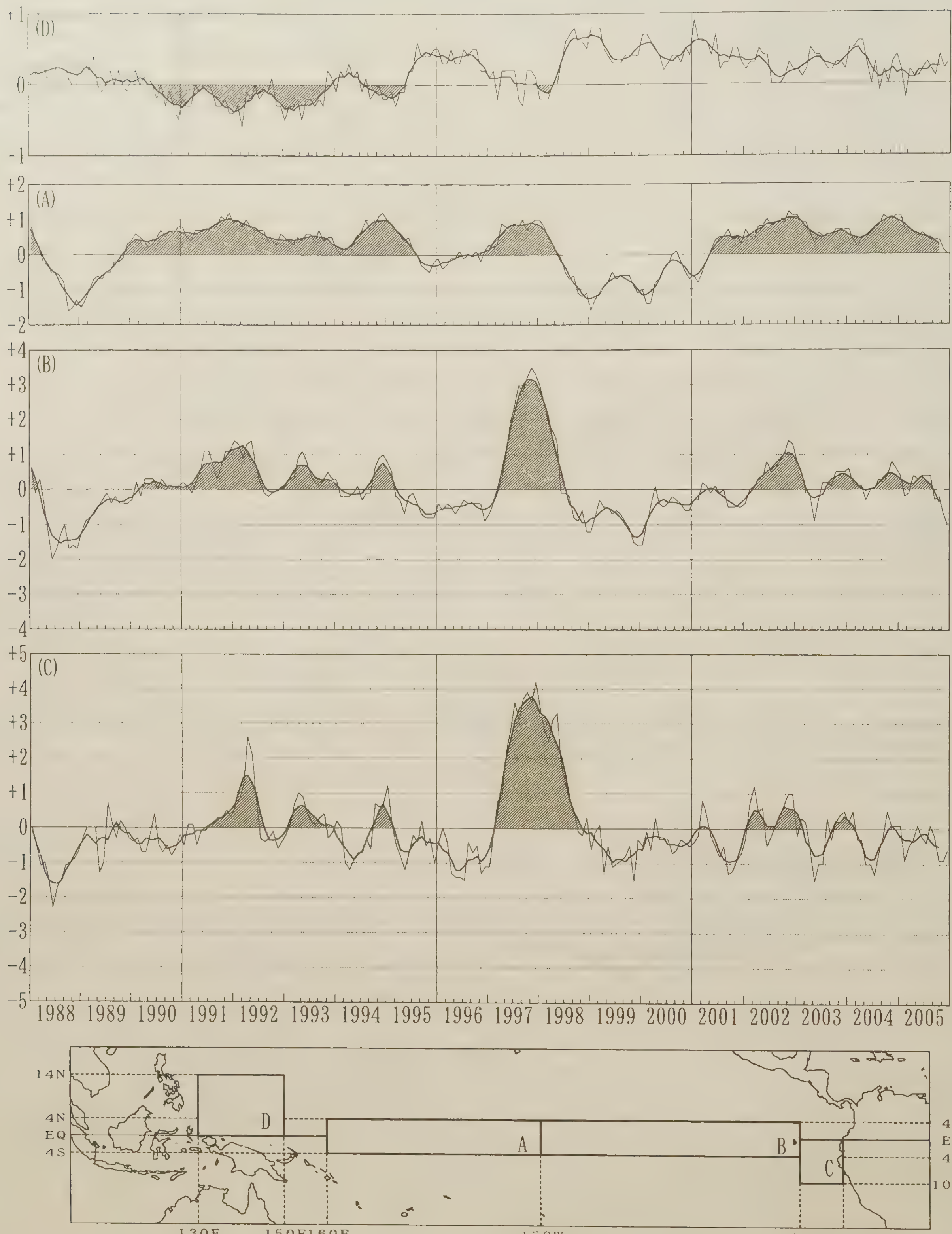


第25図 海域平均海面水温偏差の長期変動

Fig. 25 Long-term variations of monthly mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Anomalies are computed from the JMA climatology (1971-2000). Thin lines show the monthly mean and thick lines their 13-month running means.



Time Series of Tropical Pacific SST Anomalies



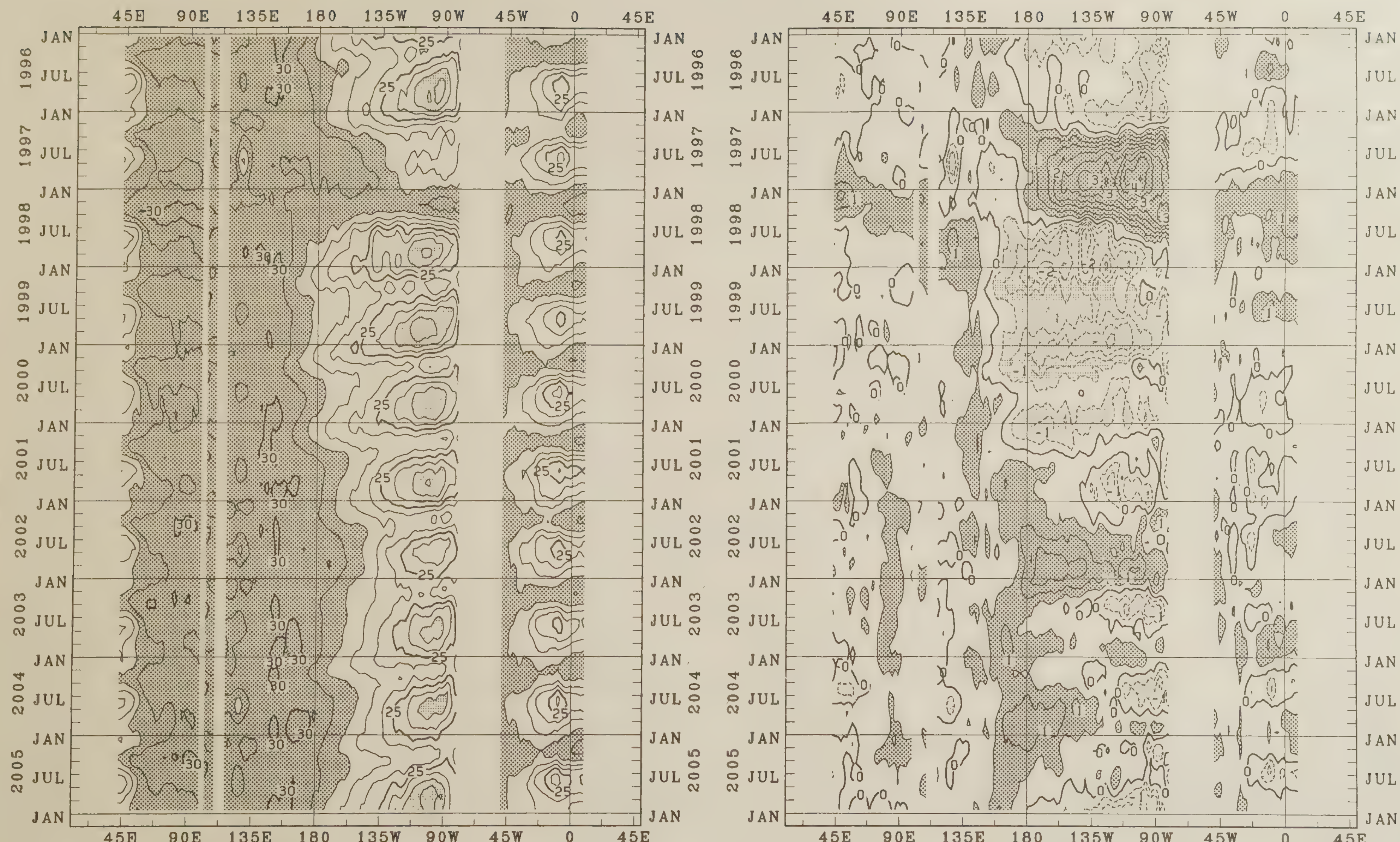
第26図　太平洋熱帯域の海面水温偏差時系列図

Fig. 26 Time series of monthly mean SST anomalies (°C) in the tropical Pacific Ocean for the areas indicated at the bottom panel.
Thin lines show the monthly means and thick lines their 5-month running means. Positive anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1971-2000).

MONTH YEAR	SEA SURFACE TEMPERATURE AND ANOMALY (°C) REGION D 14N-EQ 130E-150E		REGION A 4N-4S 160E-150W		REGION B 4N-4S 150W-90W		REGION C EQ-10S 90W-80W		SOI	SEA LEVEL PRESSURE ANOMALY (hPa) TAHITI 17-33S 149-37W	DARWIN 12-24S 130-52E
JAN 03	28.7	0.2	29.1	1.1	26.2	0.8	24.3	-0.2	-0.1	-0.1	0.2
FEB 03	28.4	0.1	28.9	0.9	26.8	0.5	26.3	0.3	-0.5	-1.5	-0.2
MAR 03	28.7	0.2	29.0	0.9	27.0	-0.1	26.5	0.2	-0.3	-0.2	0.5
APR 03	29.3	0.5	28.8	0.6	27.1	-0.1	24.9	-0.5	-0.1	0.5	0.8
MAY 03	29.7	0.4	28.9	0.3	26.0	-0.9	22.8	-1.5	-0.6	-0.7	0.2
JUN 03	29.8	0.4	29.1	0.6	25.9	-0.3	21.9	-1.0	-0.9	-0.9	0.4
JUL 03	29.6	0.3	29.0	0.5	25.6	0.2	20.9	-1.0	0.2	0.7	0.3
AUG 03	29.4	0.2	28.9	0.5	24.9	0.2	21.2	0.3	0.0	-0.2	-0.1
SEP 03	29.5	0.2	28.9	0.5	24.8	0.1	20.2	-0.3	-0.1	-0.3	0.0
OCT 03	29.7	0.3	29.1	0.7	25.2	0.5	21.1	0.2	-0.1	-0.5	-0.4
NOV 03	29.6	0.3	29.1	0.7	25.2	0.5	22.2	0.4	-0.2	0.0	0.4
DEC 03	29.2	0.2	28.9	0.7	25.5	0.5	23.4	0.5	1.1	0.9	-1.1
JAN 04	29.0	0.5	28.7	0.7	26.0	0.6	24.7	0.2	-1.0	-1.5	0.9
FEB 04	28.8	0.5	28.4	0.4	26.5	0.2	26.5	0.5	0.8	1.4	-0.6
MAR 04	29.1	0.6	28.3	0.2	27.2	0.1	26.0	-0.3	0.1	-0.7	-1.3
APR 04	29.4	0.6	28.7	0.5	27.3	0.1	25.1	-0.3	-1.4	-1.0	1.3
MAY 04	29.6	0.3	29.1	0.5	26.6	-0.3	23.3	-1.0	1.2	0.9	-0.7
JUN 04	29.4	0.0	29.1	0.6	26.2	0.0	21.9	-1.0	-1.1	0.1	1.7
JUL 04	29.6	0.3	29.3	0.8	25.4	0.0	20.6	-1.3	-0.6	-0.2	0.9
AUG 04	29.1	-0.1	29.2	0.8	25.0	0.3	20.2	-0.7	-0.5	-0.5	0.3
SEP 04	29.5	0.2	29.5	1.1	24.9	0.2	20.3	-0.2	-0.2	0.4	0.9
OCT 04	29.4	0.0	29.4	1.0	25.1	0.4	21.4	0.5	-0.2	0.0	0.3
NOV 04	29.6	0.3	29.4	1.0	25.5	0.8	21.9	0.1	-0.7	-0.8	0.5
DEC 04	29.4	0.4	29.3	1.1	25.6	0.6	23.0	0.1	-0.7	-1.4	-0.1
JAN 05	28.7	0.2	29.1	1.1	25.8	0.4	24.6	0.1	0.3	0.3	-0.3
FEB 05	28.1	-0.2	28.7	0.7	26.1	-0.2	25.1	-0.9	-2.2	-3.8	1.9
MAR 05	28.7	0.2	28.8	0.7	27.0	-0.1	25.8	-0.5	0.2	0.8	0.5
APR 05	28.9	0.1	28.8	0.6	27.6	0.4	25.1	-0.3	-0.5	0.2	1.3
MAY 05	29.4	0.1	29.1	0.5	27.2	0.3	24.4	0.1	-1.2	-0.8	0.9
JUN 05	29.6	0.2	29.1	0.6	26.6	0.4	22.7	-0.2	0.4	0.0	-0.6
JUL 05	29.6	0.3	29.0	0.5	25.8	0.4	21.5	-0.4	0.1	0.3	0.2
AUG 05	29.4	0.2	28.8	0.4	25.1	0.4	21.0	0.1	-0.6	-0.5	0.4
SEP 05	29.4	0.1	28.8	0.4	24.4	-0.3	20.3	-0.2	0.3	0.4	-0.2
OCT 05	29.8	0.4	28.8	0.4	24.5	-0.2	20.0	-0.9	1.2	1.3	-0.8
NOV 05	29.5	0.2	28.5	0.1	24.0	-0.7	20.9	-0.9	-0.3	-0.8	-0.4
DEC 05	29.3	0.3	28.2	0.0	24.0	-1.0	22.3	-0.6	0.2	0.6	0.2

第1表　太平洋熱帯域の大気及び海洋の監視指数

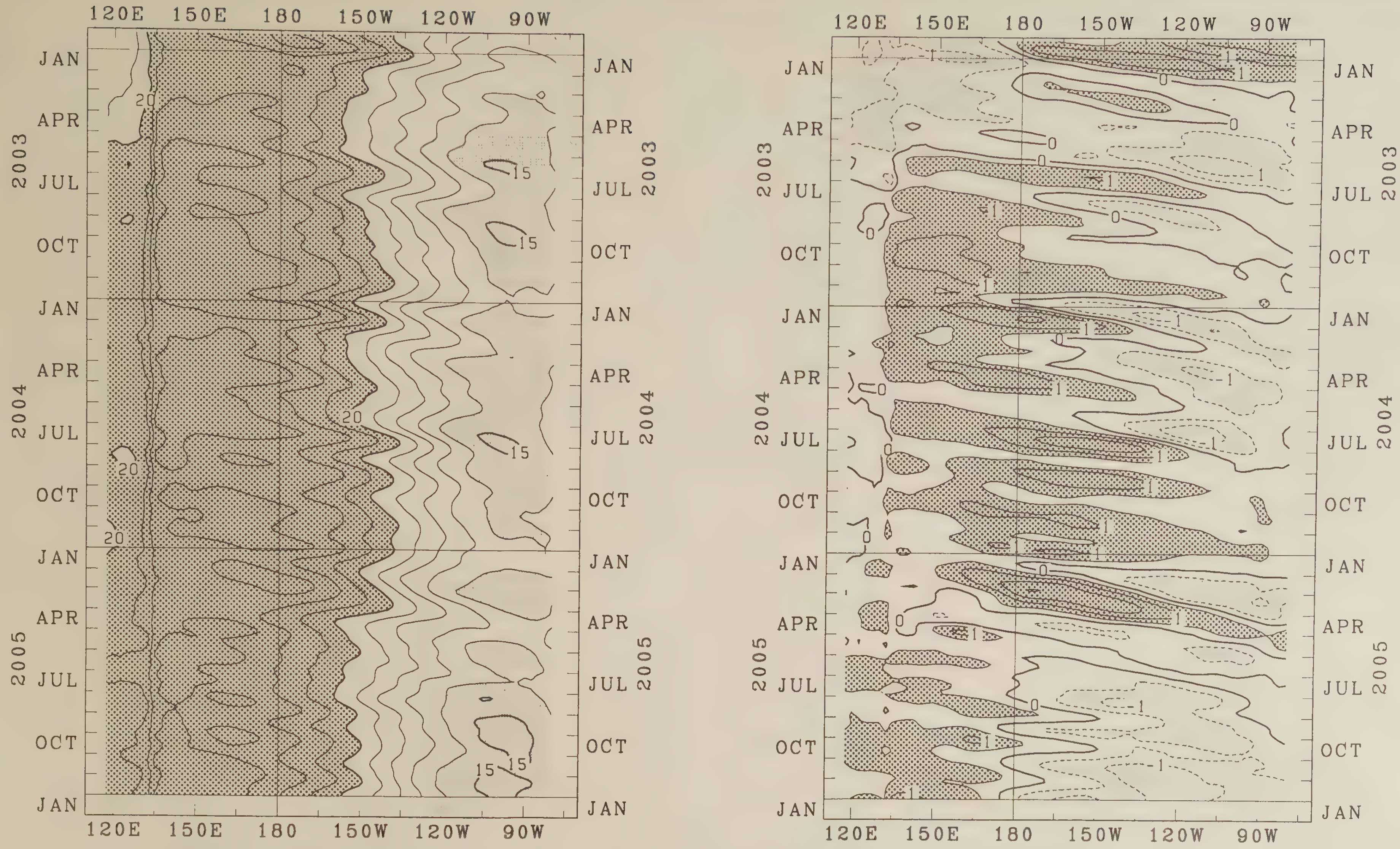
Table 1 Atmospheric and oceanic monitoring indices in the tropical Pacific Ocean



第 27 図　赤道に沿った海面水温（左）および偏差（右）の時間-経度断面図

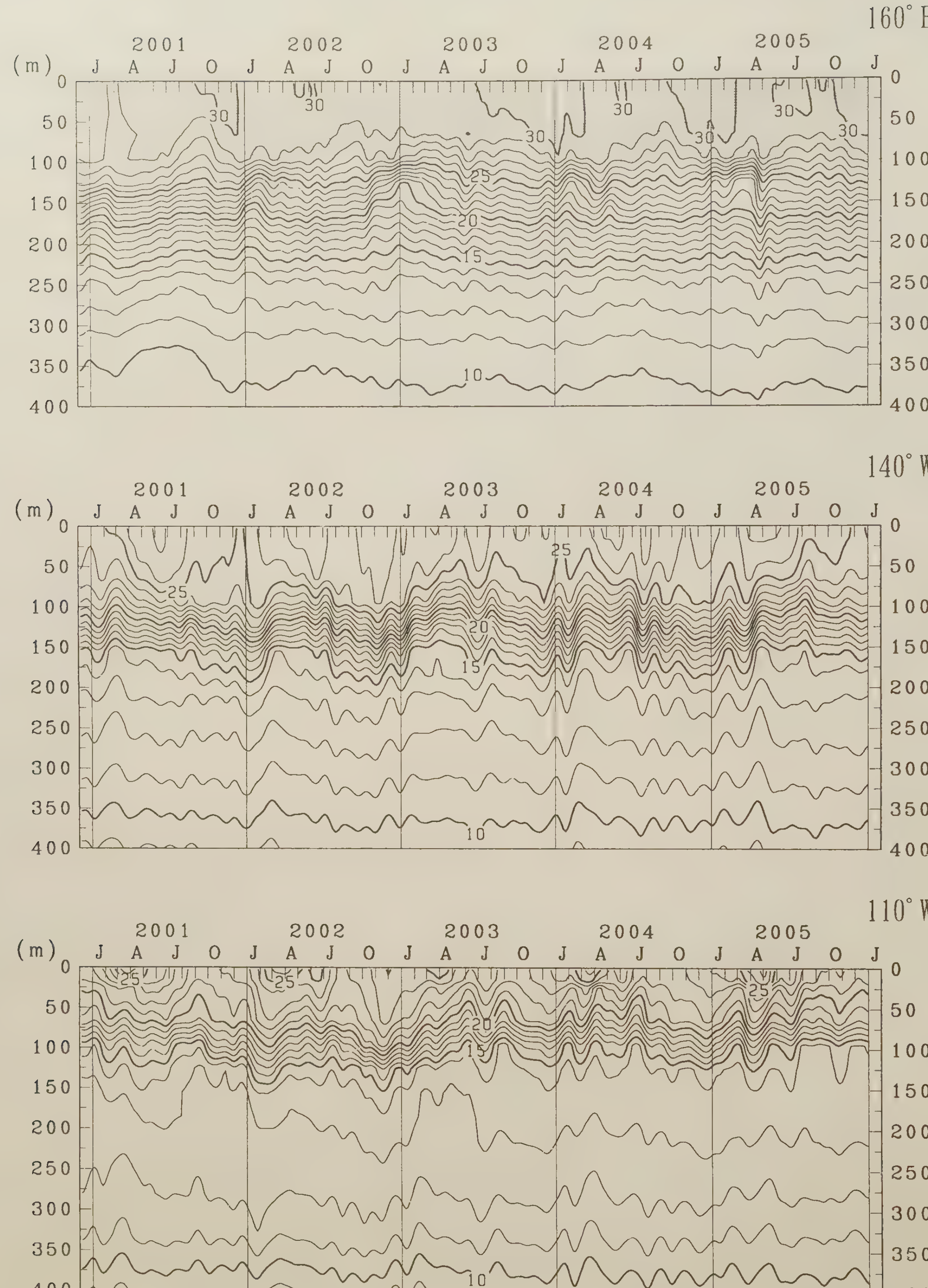
Fig. 27　Time-longitude sections of SSTs (left) and anomalies (right) along the equator (2 °N-2 °S) in the global ocean. Contour intervals are 1 °C (left) and 0.5 °C (right). Values greater than 28 °C (+0.5 °C) are dark-shaded and values less than 23 °C (-0.5 °C) are light-shaded in the left (right) panel. Dashed contours indicate negative anomalies in the right panel. Anomalies are computed from 1971-2000 base period means.

Time-Longitude Sections of Ocean Heat Content & Anomalies (Eq.)



第28図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

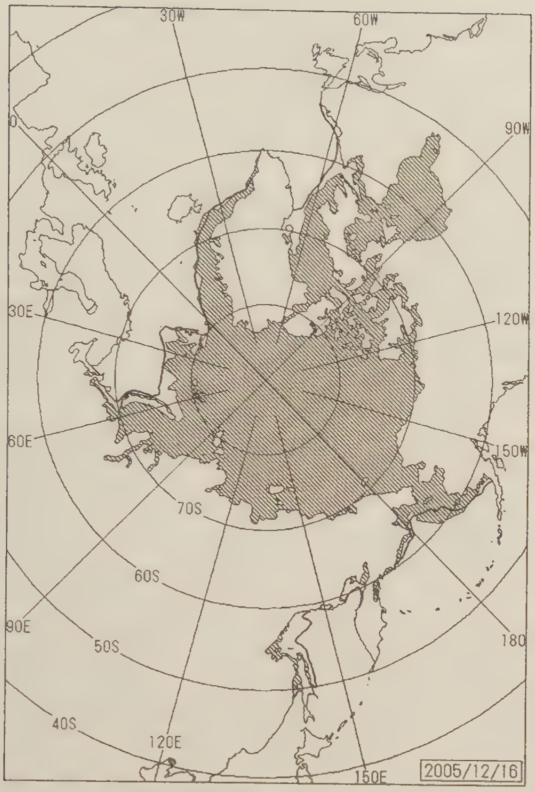
Fig. 28　Time-longitude sections of ocean heat content in the upper 260 m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour intervals are 1°C (left) and 0.5°C (right). Values greater than 20°C (+0.5°C) are dark-shaded and values less than 16°C (-0.5°C) are light-shaded in the left (right) panel. Dashed contours indicate negative anomalies in the right panel. Anomalies are computed from 1987-2004 base period means.



第29図　太平洋赤道域の表層水温の時間－深度断面図

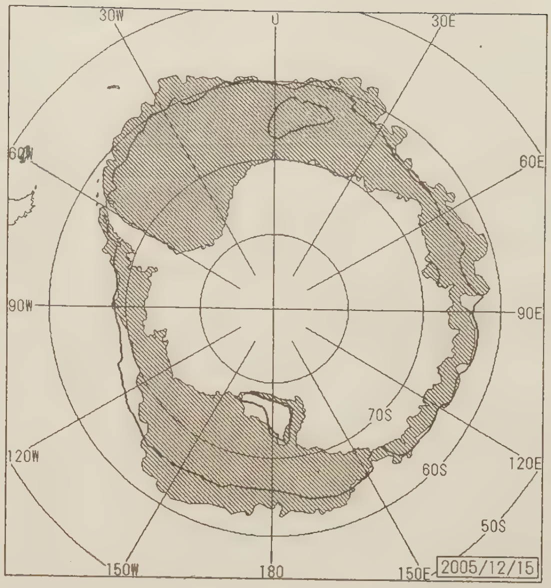
(上：西部、中：中部、下：東部)

Fig. 29 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.



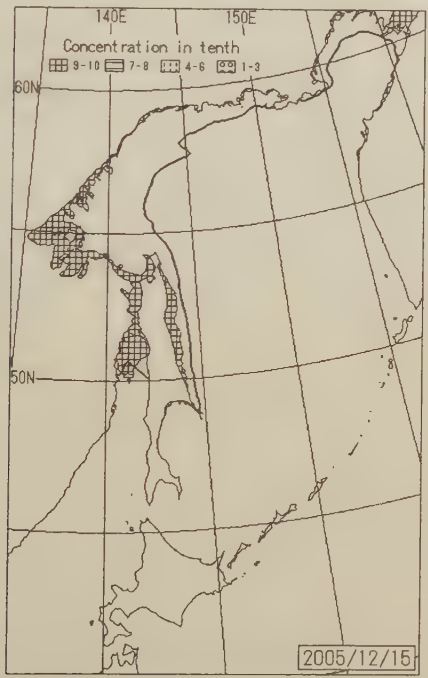
第 30-1 図　北極域の海氷図(2005 年 12 月 16 日)

Fig.30-1 Sea ice chart for the Arctic on 16 Dec. 2005.
The shaded area represents the sea ice extent. The bold line denotes the mean ice edge averaged for the period from 1979 through 2000.
The data source is the National Ice Center (USA).



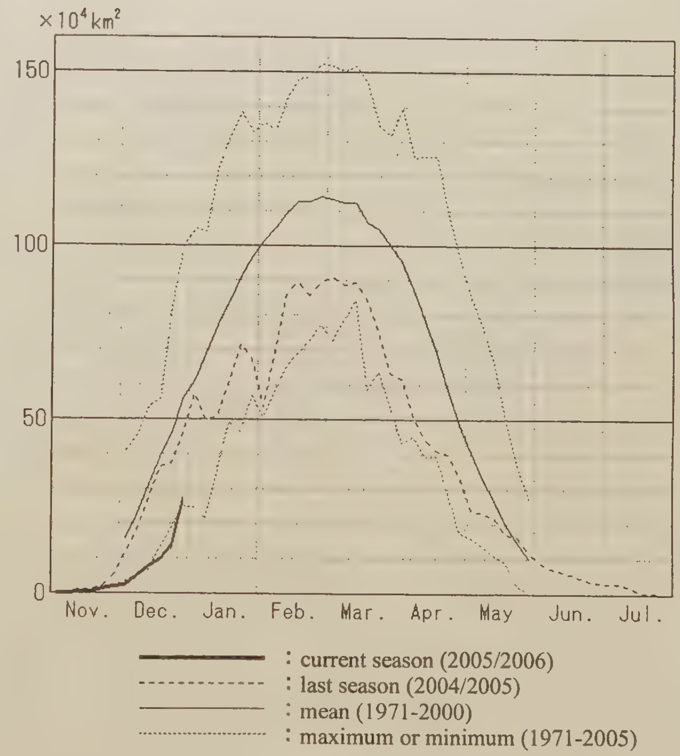
第 30-2 図　南極域の海氷図(2005 年 12 月 15 日)

Fig.30-2 Sea ice chart for the Antarctic on 15 Dec. 2005.
The shaded area represents the sea ice extent. The bold line denotes the mean ice edge averaged for the period from 1979 through 2000.
The data source is the National Ice Center (USA).



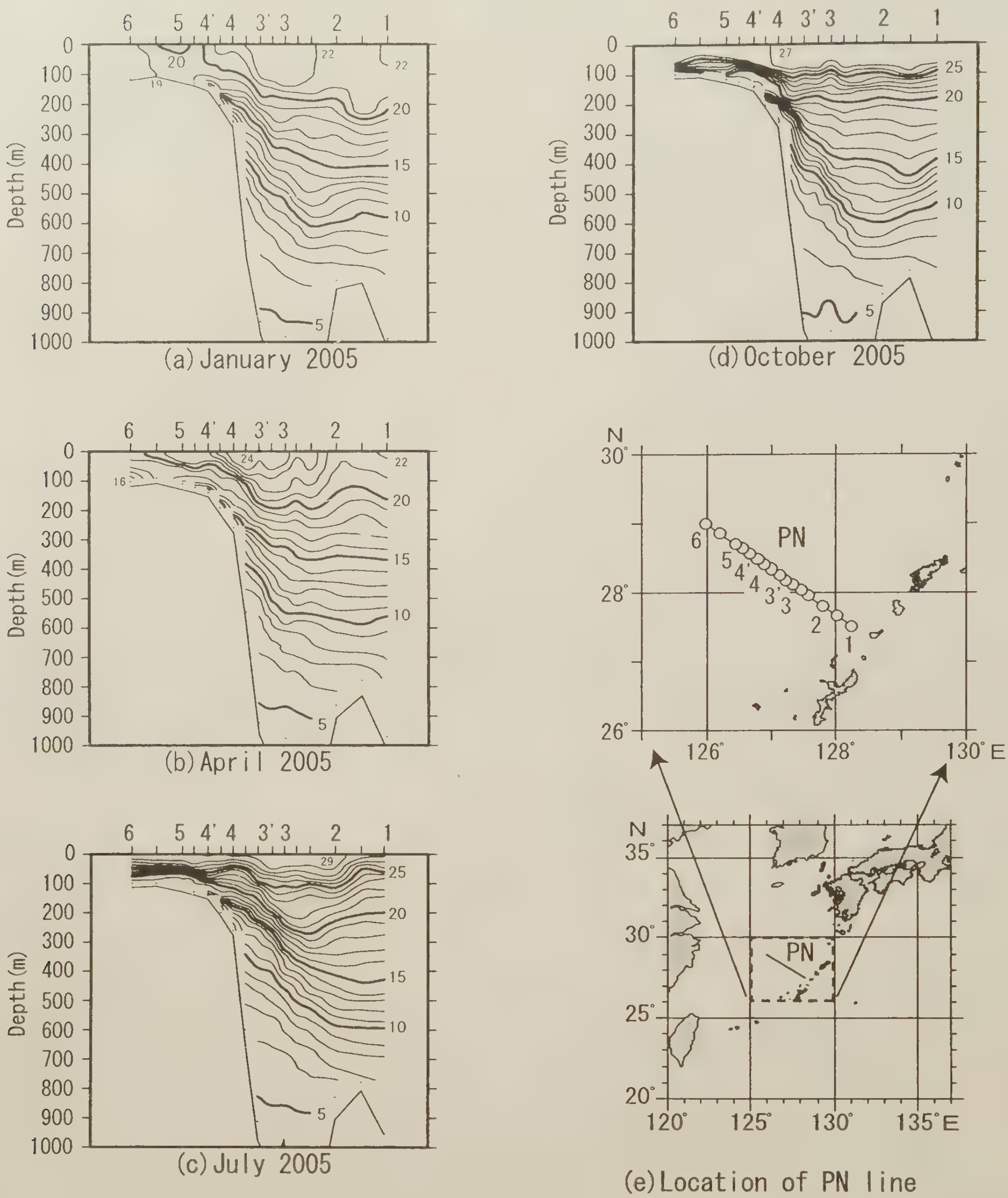
第 30-3 図　オホーツク海の海氷図(2005 年 12 月 15 日)

Fig.30-3 Sea ice chart for the Sea of Okhotsk on 15 Dec. 2005.



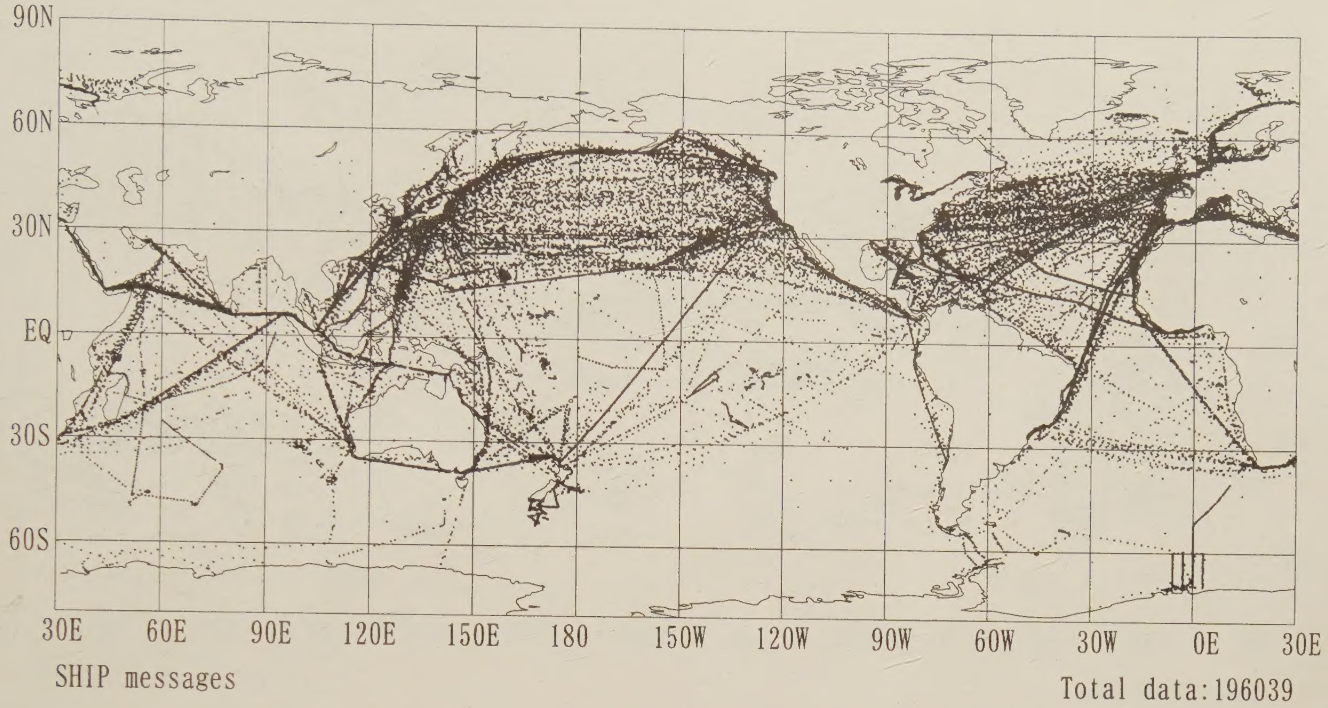
第 30-4 図　オホーツク海の海氷域面積の経過図

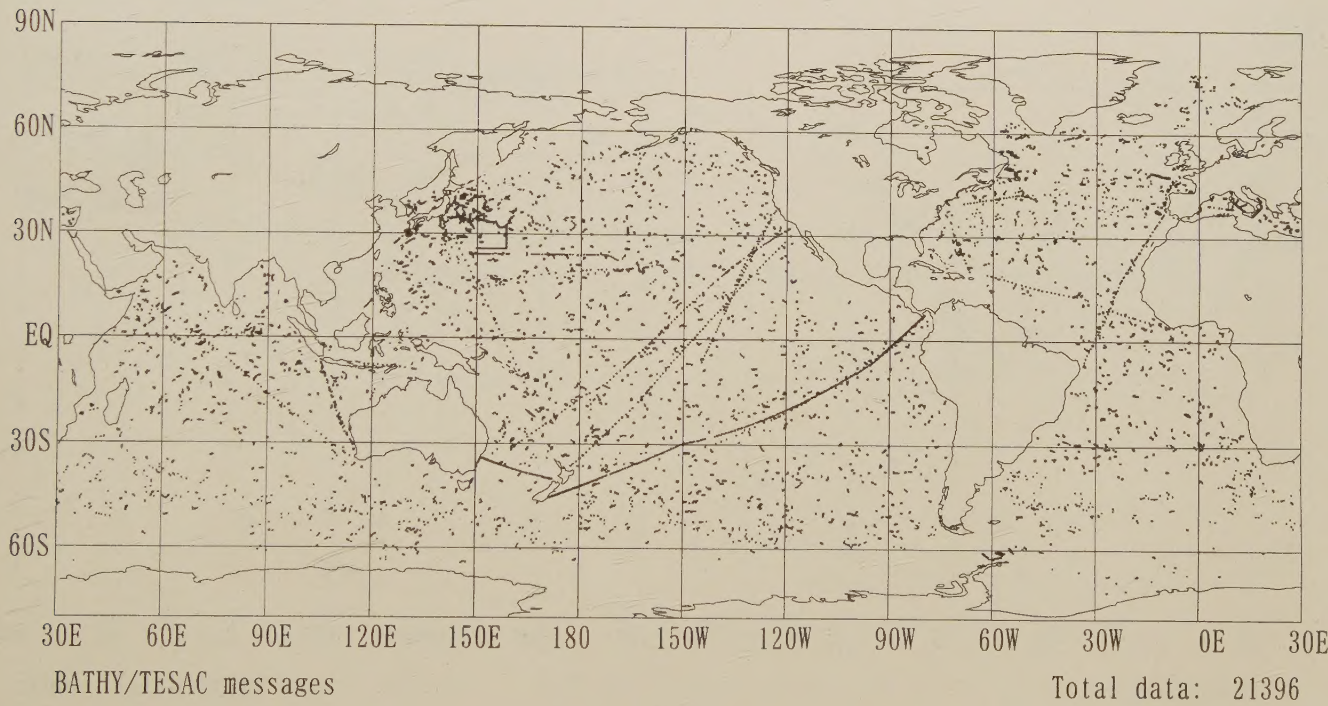
Fig.30-4 Time series of 5-day sea ice area in the Sea of Okhotsk



第31図　長崎海洋気象台長風丸によるＰＮ線に沿った水温鉛直断面図(℃).
(a)2005年1月、(b)2005年4月、(c)2005年7月、(d)2005年10月、(e)ＰＮ線の位置図.

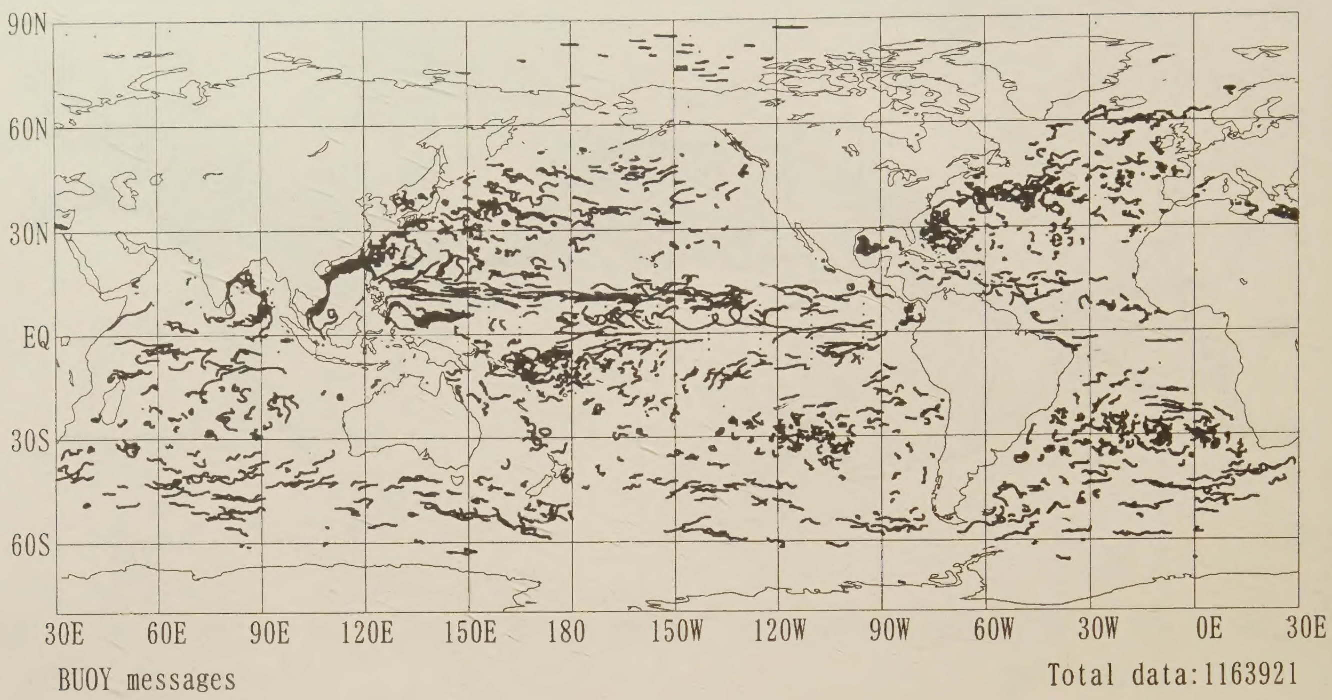
Fig.31 Vertical sections of water temperature(℃) along PN line by R/V Chofu Maru of the Nagasaki Marine Observatory, JMA.
(a)January 2005,(b)April 2005,(c)July 2005,(d)October 2005 and (e)Location of PN line.

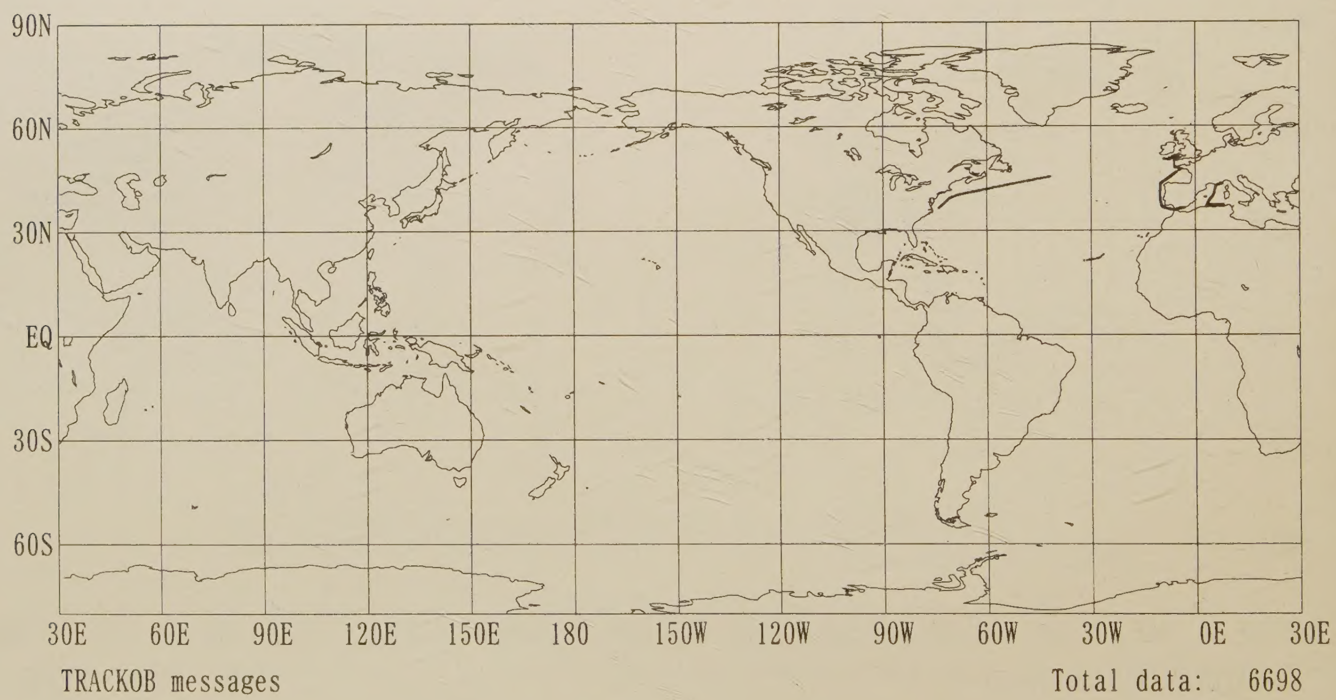




第32-1図　測点分布図(2005年12月)

Fig. 32-1 Geographical distribution of SHIP messages (top) and BATHY/TESAC messages (bottom) for December 2005.





第32-2図　測点分布図(2005年12月)

Fig. 32-2 Geographical distribution of BUOY messages (top) and TRACKOB messages (bottom) for December 2005.

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防衛庁、海上保安庁

水産総合研究センター

海洋研究開発機構、宇宙航空研究開発機構

東京大学

水産試験場等（北海道、青森県、岩手県、秋田県、福島県、茨城県、東京都、新潟県、富山県、石川県、静岡県、愛知県、三重県、和歌山県、鳥取県、島根県、佐賀県）

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